FOUNDED IN 1856

RAILWAY AGE

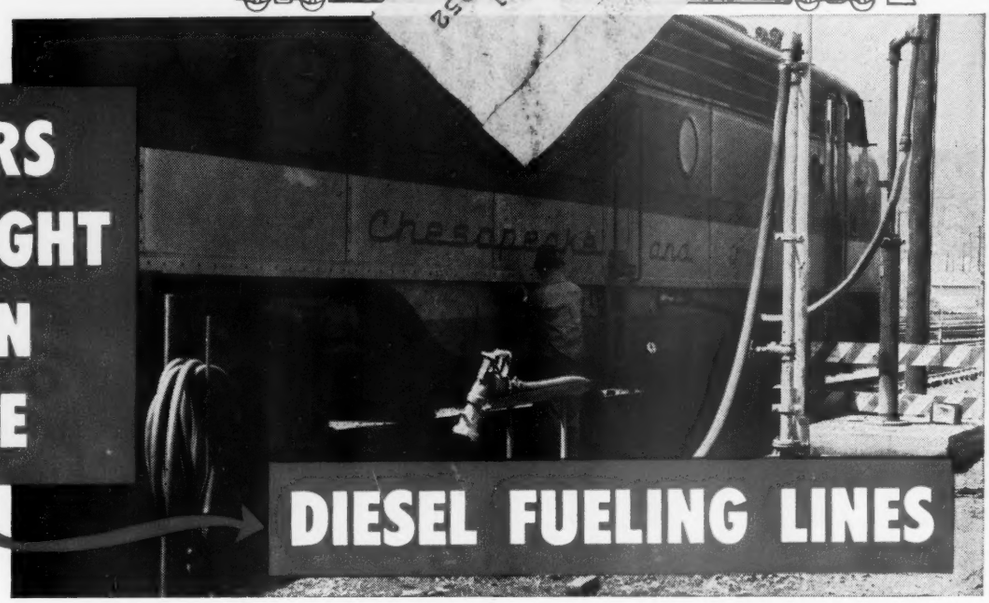
THE STANDARD RAILROAD WEEKLY FOR ALL

JULY 21, 1952

UNIVERSITY OF MICHIGAN
TRANSPORTATION LIBRARY
1026 E. ENGINEERING BLDG. A-11
ANN ARBOR MICHIGAN
RI-2052

KEEPS C & O's DIESELS

BYERS WROUGHT IRON PIPE

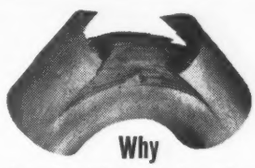


DIESEL FUELING LINES

When the Chesapeake and Ohio Railway made plans for Diesel fueling and watering facilities throughout their system, company engineers took careful steps to protect the permanence of the installations. More than 200 tons of Byers Wrought Iron pipe in 3", 4", 6" and 8" sizes was used to handle the fuel and water requirements of the Line's new passenger Diesels. The illustrations above show a part of the Byers Wrought Iron pipe installation serving the C&O Diesels at Ashland, Kentucky.

Diesel servicing lines represent one of many proved applications of genuine wrought iron in the railroad industry. Leading railroad engineers in increasing numbers are finding that genuine wrought iron is the answer to durability in the many installations where corrosion, vibration or shock are service hazards. Locomotive and car piping, coaling stations and water tanks, bridge deck, blast plates and pier protection plates—are all exposed to one or more of these service hazards, and in every one, genuine wrought iron has established superior records of long-life with a minimum of maintenance.

A. M. Byers Company, Pittsburgh, Pa., Established 1864.



Why Genuine Wrought Iron Lasts

This notch-fracture test specimen illustrates the unique fibrous structure of genuine wrought iron—which is responsible for the high corrosion resistance of the material. Tiny threads of glass-like silicate slag, distributed through the body of high-purity iron, halt and disperse corrosive attack, and discourage pitting and penetration. They also anchor the initial protective scale, which shields the underlying metal.

BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS

EMERGENCY SET-OFF BY ONE MAN

One man can quickly remove the Fairbanks-Morse Model 101 from the rails—even without a set-off.

Low lifting weight, balance, and guards between the wheels contribute to this vital safety advantage. Add features of immediate reverse, four-wheel brakes, grouped controls, full visibility—and you'll see why the Model 101 Motor Car has won such wide acclaim on railroads for safety.

For all maintenance, inspection and signaling service, look to the complete line of Fairbanks-Morse cars. You'll find the answer to safe, reliable transportation.

Fairbanks, Morse & Co., Chicago 5, Illinois.

FAIRBANKS-MORSE

a name worth remembering when you want the best

RAIL CARS • RAILROAD EQUIPMENT • PUMPS • SCALES • ELECTRICAL MACHINERY
DIESEL AND DUAL FUEL ENGINES • DIESEL LOCOMOTIVES • MAGNETOS

Vol. 133 No. 3 July 21, 1952

RAILWAY AGE

With which are incorporated the Railway Review, the Railroad Gazette, and the Railway-Age Gazette. Name Registered in U. S. Patent Office and Trade Mark Office in Canada.

Simmons-Boardman Publishing Corporation: James G. Lyne, President. Samuel O. Dunn, Chairman Emeritus. J. S. Crane, Vice-President and Secretary. C. Miles Burpee, Harry H. Melville, C. W. Merriken, John R. Thompson, William H. Schmidt, Jr., J. S. Vreeland, Fred W. Smith, Vice-Presidents. Robert G. Lewis, Assistant to President. Arthur J. McGinnis, Treasurer. Ralph E. Westerman, Assistant Treasurer.

EDITOR ..... James G. Lyne
EDITORIAL CONSULTANT ..... Samuel O. Dunn
EXECUTIVE EDITOR ..... William H. Schmidt, Jr.
MANAGING EDITOR ..... C. B. Tavenner
NEWS & FINANCIAL EDITOR ... Gardner C. Hudson
WASHINGTON OFFICE ...
Walter J. Taft Joe W. Kizzia
TRAFFIC & TRANSPORTATION DEPARTMENT ...
Robert G. Lewis John W. Milliken
John S. Gallagher, Jr.
MECHANICAL DEPARTMENT ...
C. B. Peck E. L. Woodward
H. C. Wilcox C. L. Combes G. J. Weihofen
ELECTRICAL DEPARTMENT ..... Alfred G. Oehler
ENGINEERING DEPARTMENT ...
M. H. Dick Henry E Michael
Radford E. Dove Ralph M. Schmidl
PURCHASES & EQUIPMENT ..... Fred C. Miles
SIGNALING & COMMUNICATIONS DEPARTMENT ...
John H. Dunn Robert W. McKnight
WESTERN NEWS DEPARTMENT .. Arthur M. Cox, Jr.
ASSOCIATE EDITOR ..... Charles Layng
LIBRARIAN ..... Edith C. Stone

Published weekly by the Simmons-Boardman Publishing Corporation at Orange, Conn., and entered as second class matter at Orange, Conn., under the act of March 3, 1879. Subscription price to railroad employees only in U. S., U. S. possessions, Canada and Mexico, $4 one year, $6 two years, payable in advance and postage free. Subscription price to railroad employees elsewhere in the Western Hemisphere, $10 a year; in other countries, $15 a year—two-year subscriptions double the one-year rate. Single copies 50¢, except special issues $1. Address Robert G. Lewis, Assistant to President, 30 Church Street, New York 7.

IN THIS ISSUE

EDITORIAL COMMENT:

The Railroads—A "Problem" or an Opportunity? 37
Let's Save Those Old Photos 38

GENERAL ARTICLES:

Trains Run in Either Direction on Both Tracks 39
Bench Marks and Yardsticks—20 41
How the GN Mechanizes Tie Renewals 42
Will Laws—and Taxes—Counteract Operating Economies? 44
This Electronic Device Simplifies Reservation Handling 46
Can Diesels Be Grouped for Tonnage Rating? 48
Tool Car Adds Flexibility to Drainage Unit 53
"Show Trains" Produce a Profit for the New Haven 54

NEWS FEATURES:

Steel Strike Affects RR Traffic and Employment 11
Canadian Railroads Ask Higher Freight Rates 12
Eastern Railroads Call for New Transport Policy 13
Tariff Simplification Requires Changes in Commission Rules 14
D.P.A. Allots Aluminum and Copper But No Steel 15

DEPARTMENTS:

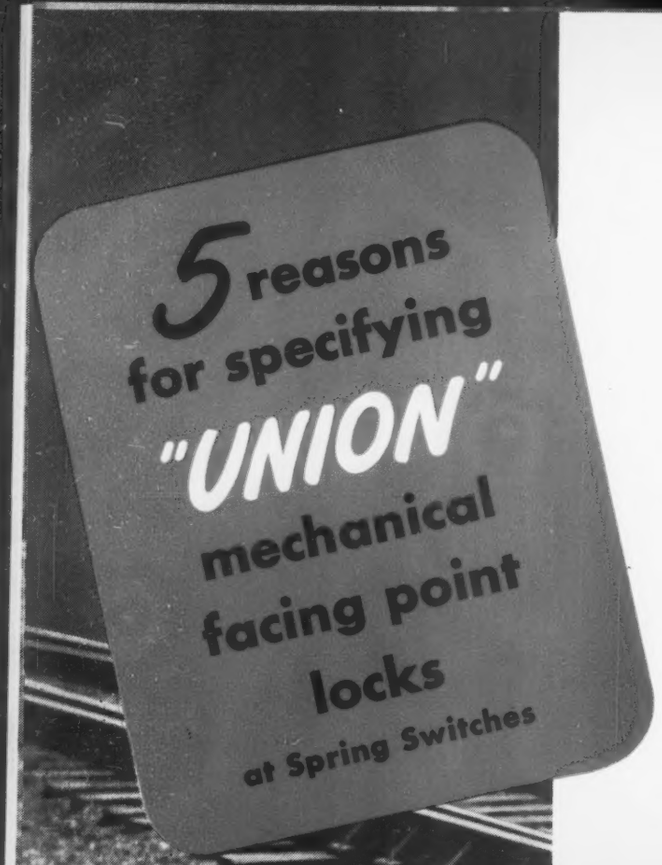
News of the Railroad World .. 11
Supply Trade 17
Equipment and Supplies 17
Revenues and Expenses 23
New and Improved Products .. 35
Financial 56
Organizations 57
Car Service 57
Railway Officers 57
Construction 66

Editorial and Executive Offices at 30 Church Street, New York 7, N. Y., and 79 West Monroe Street, Chicago 3, Ill. Branch Offices: 1081 National Press Building, Washington 4, D. C.—Terminal Tower, Cleveland 13, Ohio.—Terminal Sales Building, Portland 5, Ore.—1127 Wilshire Boulevard, Los Angeles 17, Cal.—244 California Street, San Francisco 11, Cal.—2909 Maple Avenue, Dallas 4, Tex.

Published by SIMMONS-BOARDMAN PUBLISHING CORPORATION, New York 7

Railway Age Railway Mechanical & Electrical Engineer Railway Engineering & Maintenance
Railway Signaling & Communications Car Builders' Cyclopedia Locomotive Cyclopedia
Railway Engineering & Maintenance Cyclopedia American Builder
Marine Engineering & Shipping Review Marine Catalog & Directory
Books covering transportation and building

Railway Age is a member of Associated Business Publications (A. B. P.) and Audit Bureau of Circulation (A. B. C.) and is indexed by the Industrial Arts Index and by the Engineering Index Service. Printed in U. S. A.



You can expedite traffic with safety . . . *BECAUSE*

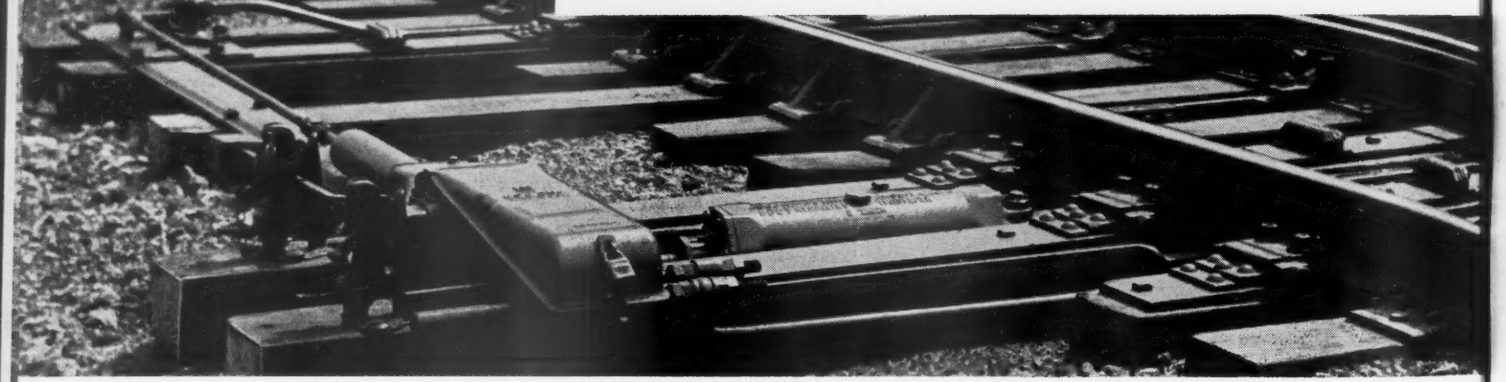
1. For trailing moves against the closed point, the "Union" Mechanical Facing Point Lock retains all the advantages of the spring switch.

2. The mechanism securely locks the switch points for facing-point moves.

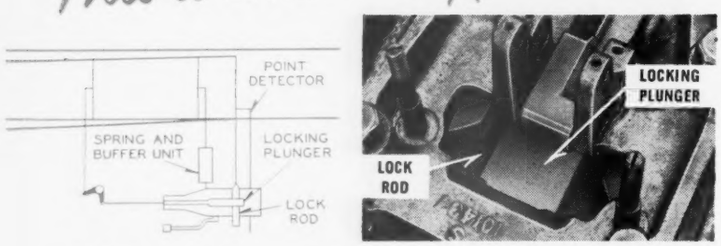
3. The locking is restored automatically, by a powerful spring, after a trailing move.

4. A built-in circuit controller for signal control checks that the switch is properly positioned and *locked.*

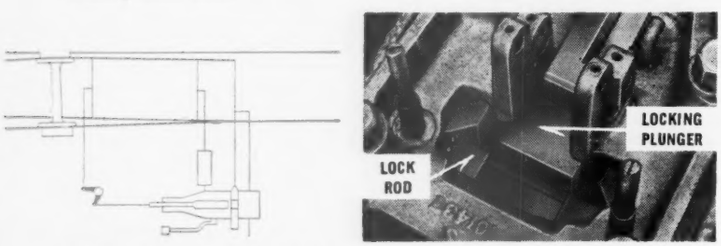
5. Through a point detector, the circuit controller continuously checks that the switch points are in the correct position and have not been damaged.



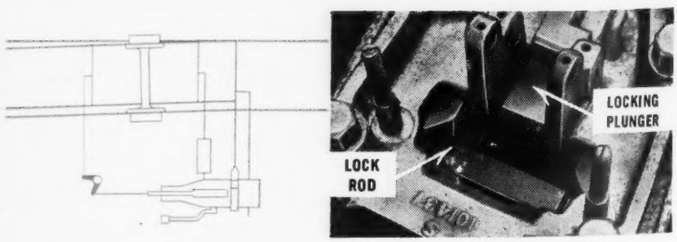
This is what happens... when a train trails a spring switch equipped with a "Union" Mechanical Facing Point Lock.



A. In the normal position of the spring switch, the standard lock rod is firmly engaged by the locking plunger of the Mechanical Facing Point Lock.



B. The flexing of the switch points by the leading wheels of the train automatically withdraws the locking plunger from the lock rod before the spring head rod starts to move.



C. As the train advances, the unlocked points are forced open against the spring action of the switch . . . and after the train has cleared the switch, the points are returned to normal and locked.

Ask our nearest district office for complete information.

UNION SWITCH & SIGNAL

DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

SWISSVALE PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

WEEK AT A GLANCE

CURRENT RAILWAY STATISTICS

Operating revenues, five months
1952 ..... $4,304,214,180
1951 4,179,377,060

Operating expenses, five months
1952 ..... $3,353,273,597
1951 3,288,475,864

Taxes, five months
1952 ..... $ 506,643,596
1951 477,808,199

Net railway operating income, five months
1952 ..... $ 373,798,186
1951 329,174,183

Net income, estimated, five months
1952 ..... $ 237,000,000
1951 208,000,000

Average price railroad stocks
July 15, 1952 ..... 63.65
July 17, 1951 ..... 51.00

Car loadings, revenue freight
27 weeks, 1952 18,983,513
27 weeks, 1951 20,506,472

Average daily freight car surplus
Week ended July 12, 1952 47,467
Week ended July 14, 1951 49,810

Average daily freight car shortage
Week ended July 12, 1952 1,497
Week ended July 14, 1951 5,349

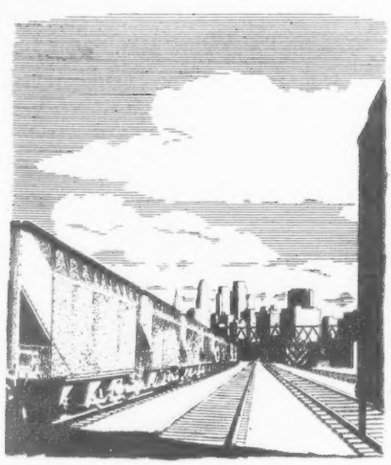
Freight cars delivered
June 1952 6,411
June 1951 9,644

Freight cars on order
July 1, 1952 99,615
July 1, 1951 147,725

Freight cars held for repairs
June 1, 1952 100,854
June 1, 1951 94,038

Net ton-miles per serviceable car per day
April 1952 (preliminary) 964
April 1951 1,042

Average number railroad employees
Mid-May 1952 1,242,620
Mid-May 1951 1,291,172



In This Issue . . .

PROBLEM OR OPPORTUNITY? Problems confronting railroads today fully equal in magnitude those which challenged pioneer railroad builders. But such problems bring with them an opportunity for management which may be fully as great as the opportunity presented to the pioneers — the tougher the problem, the greater the opportunity! On that premise the editorial beginning on page 37 suggests that there might be some advantages in talking less about the "railroad problem" and more about the "railroads' opportunity."

CAN DIESEL LOCOMOTIVES be grouped for tonnage ratings? According to E. H. Weston, of the C&NW, different makes and models can be so lumped into categories, to simplify establishment of preliminary tonnage ratings. His discussion of the subject, before the A.S.M.E., is abstracted herein, beginning on page 48.

INDICATIVE OF INCREASING ATTENTION to the problem of better yard and terminal operation is the Pennsylvania's appointment of Arthur F. McSweeney as assistant chief of freight transportation, with the specific responsibility of "improving service in yards and terminals" (*Railway Age*, July 7, page 164, and this issue, page 60). Mr. McSweeney's new duties "will keep him largely on the road in terminals." Following as it does soon after creation by the Southern of a similar position, with similar duties and desponsibilities, the PRR's action would seem to herald a growing determination in the industry to tackle what is generally recognized as one of its most serious present problems.

MECHANIZATION OF TRACK MAINTENANCE is generally regarded as one of the most fertile sources of operating economies still available to the railroads. Typical of devices and methods being resorted to to achieve such economies are the Illinois Central's auxiliary tool car, described and illustrated on page 53, and the Great Northern's carefully worked-out system of mechanized tie renewal, outlined on pages 42 and 43.

GENERAL SUPPORT by at least a large segment of the railroad industry for changes in transportation regulation recommended by the Transportation Association of America's Cooperative Project on National Transportation Policy (*Railway Age*, June 2, page 95), is indicated in the message which Gustav Metzman sent to both of the major political party conventions. Mr. Metzman, acting for the Eastern Railroad Presidents Conference, urged that party platforms include provision for such changes, and cited the T. A. A. report as showing some

of the changes required. His message is reprinted in full in the news section.

THERE IS NO PARTICULAR SATISFACTION in enjoying other people's troubles. But misery does, nevertheless, love company. Railroad men, constantly harassed by rising costs, may therefore find some small grain of comfort in the "Monthly Comment" statement, by an I. C. C. bureau, that intercity motor carriers, too, are plagued by higher expenses. The Comment article reports that 1,653 such carriers had 1951 expenses 15.2 per cent higher than in 1950, while their operating revenues were up only 12.4 per cent. That statement may, incidentally, be slight indication that the railroads' real troubles are not so much with common carrier trucks as with contract, private and "exempt" truckers.

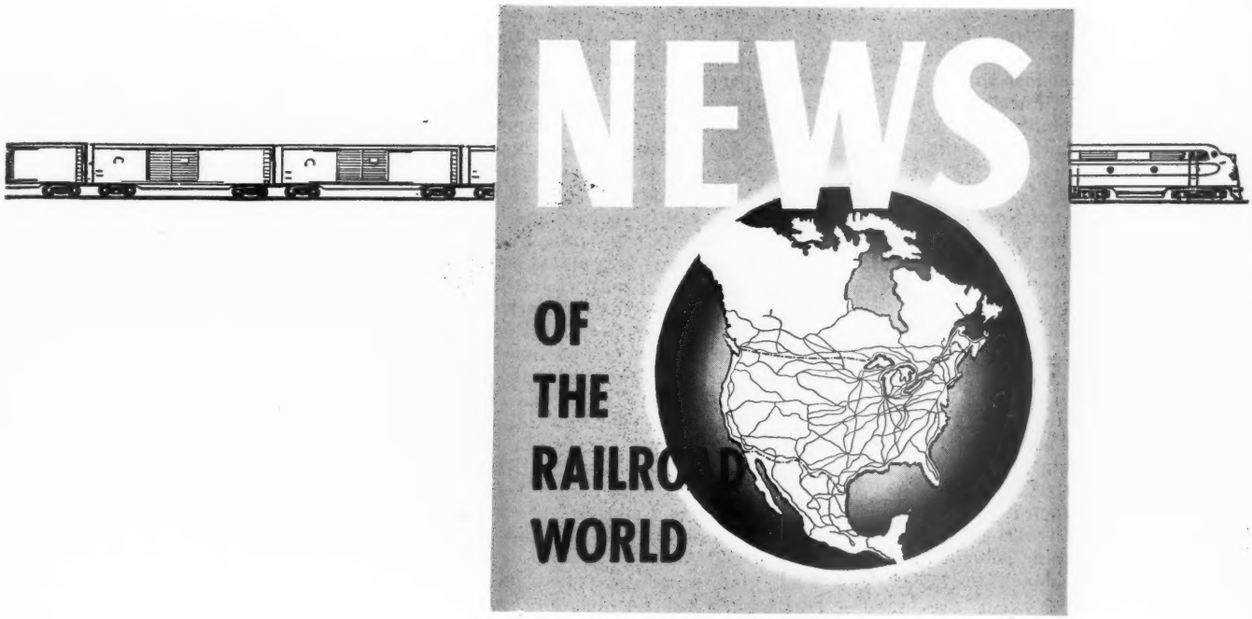
ABANDONMENT OF EXPRESS SERVICE is not subject to I.C.C. jurisdiction, according to a ruling by the commission's Division 2, with respect to cessation of service at three stations in Indiana. Such abandonment of service, the division held, is similar to and comparable with elimination of passenger train service.

AVERAGE REVENUE PER PASSENGER-MILE and also per ton-mile of Class I railroads for 1951 were the subjects of two articles in the latest "Monthly Comment" of the I. C. C.'s Bureau of Transport Economics and Statistics. The two articles show that average passenger revenue per mile was slightly higher in 1951 than in 1950, with corresponding increases in the comparable figure for both air lines and bus lines. Biggest relative increase for the rails was in commutation revenues. With respect to ton-miles, average revenue in 1951 was up 40 per cent from 1946, but there were substantial variations between territories and commodities.

FELIX S. HALES, vice-president—operation of the New York, Chicago & St. Louis since 1947, has been appointed executive vice-president of that company, effective August 1. He will be succeeded by J. C. Wallace, general manager. Mr. Hales, who entered railroad service in 1916 as a draftsman in the engineering department of the Nickel Plate, is the first man to serve as executive vice-president of that company since L. L. White advanced from that position to the presidency in 1949. Mr. Hales' new appointment is accompanied by other changes in the railroad's operating department, which are announced in the news pages of this issue.

SUPER TOLL HIGHWAYS for use of interstate buses and over-the-road trucks, separate from the roads used by passenger automobiles and other light vehicles, were proposed by Maryland's Governor Theodore McKeldin to the 44th Annual Governors' Conference, recently held at Houston. "The users of such bus and truck routes," Governor McKeldin said, "would of course have to bear, through tolls, the cost of construction, maintenance, management and policing. Furthermore, the big interstate carriers, who now often avoid the toll roads that exist, should be required to use the superhighways provided for them." The suggestion, he added, was made "in the general public welfare" and as "an important step in the promotion of highway safety."

"JET AIRLINERS—PROBABLY AROUND 1958"—that's a prediction of W. A. Patterson, president of United Air Lines, who has just announced that his company has placed orders for $56 million worth of new aircraft. The orders include 25 "DC-7s" and 10 twin-engined "Convairs"—the former, to be assigned to long-distance service, cruise at 365 m.p.h. and have a non-stop range of 3,000 miles.



Steel Strike Affects RR Traffic and Employment

As this issue of *Railway Age* went to press, the six-week-old nationwide steel strike had reportedly caused a loss of some 13.5 million tons of steel production and cost the striking steel workers about $330 million in wages. It had also had serious effects on many other industries in loss of production, loss of employment and wages, and dislocation of inventories.

Among the industries most seriously affected were the railroads, as carriers of raw materials going into steel production, as transporters of finished steel and steel products, and as users of steel.

Some of these effects are highlighted by the following reports to *Railway Age*.

The Baltimore & Ohio, which suffered a traffic loss of approximately 40,000 carloads in June, estimated it will lose another 65,000 carloads in July, if the strike continues for the balance of the month. About 10,600 B&O employees, or roughly 16 per cent of its entire working force, are now furloughed because of the strike.

Central's Loss

The New York Central, losing gross revenues at the rate of approximately $750,000 per day, had furloughed 9,000 employees on its entire system, including 2,500 on the subsidiary Pittsburgh & Lake Erie.

The Pennsylvania reported a loss of "anticipated revenues" during June of between $15 million and $17 million, with no estimates yet available for July. The same road reported that it had been forced to furlough "several thousand" employees in various departments throughout its system.

The Norfolk & Western told *Railway Age* that most of the 4,050 shopmen who had been furloughed on June 27, returned to work on July 16, and that most of the 2,283 roadway maintenance employees who had also been furloughed on June 27, were likewise back at work. It added, however, that its "freight car repair and building lines at Roanoke and Portsmouth, Ohio, are still closed on account of lack of steel."

The Chesapeake & Ohio stated that it had made "no layoffs directly attributable to the steel strike."

A survey of western roads conducted by *Railway Age* on July 16 indicated that as yet there were few actual shortages of steel plaguing equipment and betterment programs. Most of the shortages actually reported were in connection with rail-laying programs. Few of them concerned locomotive and car repair work although roads suffering substantial traffic losses as a result of the steel walkout have, in many instances, trimmed shop programs considerably for budgetary reasons.

A check of railway equipment manufacturers in the midwest indicated that production was being continued by biting rather deeply into steel inventories. Most firms felt they could continue production through August but beyond that spot shortages would begin to play havoc with production lines. Production men pointed out that "lead time" consumed to continue production now would have to be made up after steel production is resumed. In other words, the effect of the steel strike will be felt for a long time after mills are reopened.

As reported in *Railway Age's* previous roundup of steel strike news (June 16, page 11), the roads hardest hit are those serving the steel industry directly. Traffic representatives are beginning to notice a reduction in shipments of heavy consumer goods such as household appliances and the auto industry is gradually coming to a halt with a very marked effect on traffic in and out of Detroit.

Nor are the layoffs all centered around steel centers such as Chicago and Pittsburgh. The Union Pacific, for instance, laid off some 250 carmen, linemen and crewmen at Salt Lake City and between there and Los Angeles because of the loss of ore, coal and finished steel products traffic to Los Angeles.

Granger Roads

The grain harvest has completely obscured the relatively minor ore and coal picture on granger roads such as the Rock Island and the Burlington. The Rock Island reports that deliveries of new rail were halted in June with only 10,600 tons received out of 25,000 tons ordered for the year. The road was allocated 1,500 tons for June. But the shortage of steel has not yet caught up to its shop program. The Burlington said its new car program was not yet affected but with steel deliveries 60 days behind schedule, the Havelock (Neb.) shops might be "at the bottom of the barrel" before long. A spokes-

man for the Milwaukee said rail laying has been deferred at several points because of lack of new rail. The Santa Fe and the Western Pacific both reported little or no effect so far.

The Chicago, West Pullman & Southern, switching a number of industries in the heart of Chicago's south side industrial area, reports traffic at normal levels and shop work "running O. K."

A spokesman for the New York Central subsidiaries, the Indiana Harbor Belt, the Chicago River & Indiana and the Chicago Junction, said operating force reductions were "substantial" in the Chicago district and traffic was dropping markedly in the Detroit area as the auto industry's steel was running out. The Baltimore & Ohio Chicago terminal has experienced a drop in siding business of more than 20 per cent—not only because of direct traffic losses due to the steel work stoppage, but because the petroleum industry (which the road serves in the Whiting, Ind., area) is becoming affected. G. M. Campbell, vice-president of the B&OCT, said many steel-dependent industries in the area were stretching their dwindling reserves by scheduling plant-wide vacations and that this has had a marked affect on traffic originating from a wide variety of manufacturing plants.

The loss of coal and manufactured products traffic has caused the Illinois Central to defer its heavy repair program for both locomotives and cars although carbuilding, for the moment at least, is continuing. A spokesman said steel shortages were "spotty" and expected to grow more intense.

A random check of representative manufacturers in the railway supply field through the mid-west revealed that while few of them as yet found it necessary to halt production for lack of steel, the "pace" of manufacture was slowing down and becoming less constant. Fairbanks Morse & Co., and the Electro-Motive Division of General Motors Corporation reported that vacation shutdowns were stretching steel stocks so that production could continue into August. But spokesmen for both locomotive building concerns expected things to get "spotty" which will make manufacturing more difficult and costly. In the car-building field, Pullman-Standard reported all plants still in operation and no layoffs as yet. In the so-called "components-industries" — those which supply parts and fittings to the car and locomotive builders— several companies queried said they were still in production and could probably continue until at least the middle of August. American Steel Foundries and the Standard Railway Equipment Company both reported their customers could not accept deliveries at a normal pace because shortages were slowing production. An A.S.F. spokesman said that of its eight plants, only one had experienced any direct steel shortages thus far.

A late report from the Southern Pacific's San Francisco headquarters indicates that lack of steel caused curtailment of new box car construction at Sacramento on July 17 "and it will compel complete shutdown of such construction before the end of the month." The company has received no rail for a month and the rail-laying program has come to a complete standstill as rail on hand is being conserved for track repairs. Fewer trains are being operated, as business in general is falling off and there have been consequent "substantial reductions of forces . . . which will become more drastic if the strike continues".

Canadian Railroads Ask Higher Freight Rates; Wage Negotiations Deadlocked

An immediate general increase of seven per cent, and a subsequent additional increase of nine per cent, in all Canadian freight rates, are requested in a petition filed with the board of Transport Commissioners on July 14 by the Railway Association of Canada on behalf of its member companies.

The Transport Board has set September 22 as the date for a hearing on the application for the immediate 7 per cent rate increase.

The railways point out that their request "has no relationship whatever" to current, and now deadlocked, negotiations respecting the demands of railway unions for wage increases. But the petition gives notice that "upon determination of negotiations with the operating groups of employees and upon conclusion of new agreements with the non-operating employees of the member companies or when a new wage pattern becomes evident, applicant will propose by way of amendment of this application or otherwise, such further increases in their tolls or rates as may prove necessary."

The increases now requested would apply, the petition says, to "rates from and to United States-Canadian border points"; to "rates on import and export traffic through Canadian ports moving at rates not related to rates in effect from and to U.S. ports"; and to all auxiliary services, including milk and cream in passenger service, protective services, switching, terminal and wharfage charges, and the like. Recognized differentials via rail-water-rail routes would be preserved "as far as may be practicable."

The only rates exempted from the proposed increases would be domestic rates on grain and grain products in western Canada, which are generally fixed by law. Coal and coke would likewise be excepted from the general percentage increases, but would be subject to two flat increases—one to take effect coincident with the immediate seven per cent increase and the other to accompany the subsequent nine per cent boost. Each increase would be 10 cents per ton on rates which are now $1 per ton or less; 15 cents per ton where the rate is now from $1.01 to $2; and 20 cents per ton on present rates of $2.01 per ton or more. Thus, the total of the proposed increases on coal and coke would range from 20 cents to 40 cents per ton.

The petition points out that, in the latest general rate increase case (*Railway Age*, February 4, page 16), the Transport Board authorized rates which were calculated to produce for the Canadian Pacific a return of 4.25 per cent, or $46,644,000 per year, on a calculated net investment of approximately $1,100,000,000. Notwithstanding a slight increase in traffic volume in 1952 as compared with 1951, the CPR now estimates that present rates will produce net earnings of only $40,500,000 for the calendar year 1952 and of only $39,500,000 for a "constructive" year. The resulting estimated deficiency of $6 million or $7 million in CPR earnings is principally attributable, the petition says, to "increases in material prices, more especially ties and steel, and . . . adjustments in rates of pay and working conditions of some categories of employees."

CPR Is "Yardstick"

Other Canadian railroads, the petition declares, "are content that Canadian Pacific should be used as the 'yardstick' for rate-making purposes." It is contended, however, that that company's net investment is not $1,100,000,000, as previously calculated by the Transport Board, but $1,146,664,833; and that its rate of return should be not 4¼ per cent, but 6½ per cent. The combined increases now requested, the Railway Association says, will still yield to the CPR a return of only 5 per cent on the larger investment figure; and the higher rates sought in the petition are the "minimum necessary" to provide a "just and reasonable" level of rates.

In response to a joint request of railroads and unions, Canadian Labor Minister Milton Gregg has named Arthur MacNamara, deputy labor minister, as conciliation officer to be at the disposal of both parties in the pending railway wage dispute.

The case is the one in which 17 unions representing 125,000 non-operating railway employees in Canada are seeking a 45-cent-per-hour wage increase, the union shop, escalator clauses and other concessions (*Railway Age*, July 14, page 13). The railways and unions have been unable to reach a settlement and asked the federal labor department for help in breaking the deadlock.

A native of Ontario, Mr. MacNamara became an official in the Manitoba provincial government in 1929; later headed the Minimum Wage Labor Board of that province, and finally be-

came deputy labor minister at Winnipeg. He came to Ottawa early in World War II as head of the Dependents' Allowance Board, set up for war veterans, and through most of the war was federal deputy labor minister. He is widely credited with having been instrumental in keeping employers and labor "in useful harmony" during the war and in the postwar period.

Mr. MacNamara will be assisted by M. M. MacLean, director of industrial relations for the labor department, and other departmental officers. Their job will be to try to solve the wage increase demands, which are reportedly the main stumbling block to settlement, and to keep the negotiations going. If no agreement can be reached with their assistance within a reasonable time, the government will probably be asked to appoint a conciliation board to investigate the dispute and make nonbinding recommendations for its settlement.

Meantime, the Canadian Pacific and the Brotherhood of Locomotive Engineers have signed a renewal of their working agreement covering enginemen in the Eastern region. The new agreement will run until October 1, 1953, and provides for an increase in rates of pay of 11 per cent without rules changes, to take effect October 1, 1952. The road's western engineers signed a similar agreement recently.

Eastern Railroads Call on Both Parties for New Transport Policy

Eastern railroads have called on Republican and Democratic leaders to modernize federal transportation policy, principally along lines recommended by the Transportation Association of America *(Railway Age*, June 2, page 95).

In telegrams to the resolutions committees of both parties, Gustav Metzman, retiring president of the New York Central and chairman of the Eastern Railroad Presidents Conference, which represents 37 Class I railroads operating in the 17 states of the northeastern United States, directed attention to "one of the most serious problems in our domestic life" and made specific recommendations "to insure that the efficiency of our national transportation system be maintained and improved under private ownership."

The text of Mr. Metzman's telegram follows:

"As political leaders of the nation discuss the vital issues of the day, I am profoundly disturbed to note that nothing has been said to indicate that leaders of the Republican party are concerned with or even acutely aware of one of the most serious problems of our domestic life. I refer to the inadequacies of our national transportation policy and the resultant precarious position of the American railway industry.

National Necessity

"The American people spend more than 50 billion dollars a year for transportation in one form or another. No industry or community can participate fully in the American way of life without good transportation. It is tremendously important to the public interest that the nation's lawmakers take steps to insure that the efficiency of our national transportation system be maintained and improved under private ownership, to the end that this system be able to meet the demands of our expanding economy in time of peace and do its part in preserving our security in time of war.

"The major problems of the railroads stem directly from inadequate, outmoded regulations which stifle fair and healthy competition in the transportation business and deny railroad management the normal prerogatives through which this management could solve its own problems to the direct benefit of every man and woman in the country.

"Government policies inaugurated a half century ago to serve the realities of the day when the railroads were a virtual transportation monopoly have become so inconsistent with today's facts as to endanger the cornerstone of our system of free enterprise. Since the end of World War II, with the highest traffic volume in history, the revenue of the railroad industry has been insufficient either to modernize its plant out of income or to restore its credit so as to attract necessary equity capital. This situation points inevitably to some form of nationalization or government ownership, which I feel certain would be the beginning of the end of the American way of life as we know it.

"The lack of a realistic and consistent transportation policy derives, in large measure, from political forces generated by the business community itself, rather than from any lack of disposition by legislative leaders themselves to deal equitably and forthrightly with the problem. In fact, through the last several years, leaders of public opinion in various fields have called for constructive action, the nature of which has waited, of necessity, on agreement among leaders in transportation and business and industry generally.

Supports T.A.A. Report

"A recent development indicates that basic agreement on how to modernize national transportation policy is at hand. Recommendations for 'sound transportation for the national welfare' have been presented to the board of directors of the Transportation Association of America by the T.A.A. policy administration board after five years of study and discussion by panels representing all forms of transportation, users of transportation and investors in transportation.

"As chairman of the Eastern Railroad Presidents Conference, which represents the 37 railroads operating in the 17 highly important states in the northeastern quarter of the United States, I wish to call your attention to these recommendations as indicating the basic structure of transportation policy reform and urge that you recommend inclusion of such reform in the Republican party platform.

"I summarize the principal points on

TRANSPORT MINISTER LIONEL CHEVRIER tightens the final nut on the first Fairbanks-Morse opposed-piston diesel engine produced in Canada by the Canadian Locomotive Company, Kingston, Ont. N. R. Crump, vice-president of the Canadian Pacific, and S. F. Dingle, vice-president of the Canadian National, were both present at the ceremony, held at Kingston on June 5. Mr. Crump (at left) formally accepted the engine, which is to be installed in a "Consolidation" diesel locomotive built for the CPR. The same type of 1,600-hp. engine also may be used in ships, submarines, power stations and other applications. In the center is Robert H. Morse, Jr., C.L.C. president and general manager.

which agreement by industry and competing transportation media seems indicated:

"That unreasonable delays in I.C.C. action on requests by common carriers for rate adjustments be eliminated without prejudice to I.C.C.'s right to review and modify;

"That the I.C.C. 'rule of rate making' be changed from consideration of the effects of proposed rates on traffic volume to the effects of proposed rates on the maintenance of carrier credit;

"That the long-and-short-haul clause be repealed as a primary step toward the establishment of fair competition in the transportation business;

"That the I.C.C. shall permit the abandonment of a railroad line which is being operated at a financial loss, and have the power, on appeal, to authorize the abandonment of red-ink railroad service despite the refusal by state commissions to authorize such discontinuance;

"That contract carriers by motor, water and air shall be required to file, adhere to, and make public the rates they actually charge;

"That the agricultural products exemption apply only to the motor carriage of agricultural products and fish from producing areas to primary markets;

"That parcel post rates shall be adequate to cover all costs of the service;

"That it shall be the policy of the federal government that all users of domestic government owned transportation facilities (highways, waterways and airports) shall ultimately pay user charges sufficient to cover their fair share of the cost of building and maintaining the facilities they use."

Tariff Simplification Requires Changes in Commission Rules

Members of the Interstate Commerce Commission were advised last week that tariff simplification will require some changes in tariff rules of the commission and state regulatory bodies.

The advice came from J. W. Peters, chairman of the National Industrial Traffic League committee which is cooperating on the tariff-simplification program being carried out by the Railroads' Tariff Research Group. Mr. Peters, who is also traffic manager of the Delco-Remy Division, General Motors Corporation, spoke at a July 16 luncheon session held in Washington, D. C., in connection with the third joint meeting of the N.I.T.L. committee and the railroad Administrative Committee, headed by Fred Carpi, vice-president of the Pennsylvania, which is directing the Research Group's activities.

Nine of the commission's 11 members were guests at the luncheon. They were: Commissioners Splawn, Lee, Patterson, Johnson, Mitchell, Cross, Knudson, Arpaia, and Elliott. Also present were the N.I.T.League's president A. G. Anderson, who is general traffic manager of Socony-Vacuum Oil Company; and several members of the I.C.C. staff, including Chief Examiner Frank E. Mullen and Clarence G. Jensen, director, Bureau of Traffic. Mr. Carpi presided

In reporting on the need for changes in the commission's tariff rules, Mr. Peters called for commission cooperation in that respect. Some of the actions decided upon by the committees cannot be put into effect until the commission and state regulatory bodies "authorize departures from tariff circulars pending changes in such circulars," Mr. Peters added. At the same time, he emphasized that the simplification program does not contemplate easier rules.

"We are not asking relief so that tariffs can be made up easier or at less cost," he said. "On the contrary, the success of the project depends upon strict adherence to tough rules. . . . In no case will a conclusion as to a rule change be lightly arrived at. Tests will be made to prove that the related tariff reform will serve the user more efficiently."

Earlier in his address, Mr. Peters outlined the simplification program. There he asserted that the "sincerity of the railroads" has been made manifest by such actions as the appropriation of $100,000 a year to support the program, and the assignment to the Administrative Committee of "top-level" traffic executives. "Already the railroads have unflinchingly adopted recommendations which will significantly increase tariff-making costs," Mr. Peters also said.

Shippers' Role

He went on to report that there was "determination and sincerity" on the part of shippers, too. In that connection, he recalled the N. I. T. League's "persistent and vociferous efforts in selling the railroads on the project of a research program"; and he noted that members of the League's cooperating committee are contributing "generously of their time for objective study" of each report and recommendation of the Research Group.

"Considerable progress has been made," Mr. Peters continued. "The railroads have conferred upon the Administrative Committee full power to commit all of them to a single set of tariff-making techniques relating to form and arrangement of tariff matter. We, therefore, stand on the threshold of the absolute uniformity in tariff make-up for which the first commission foresaw the need when, in 1887, it asked Congress for legislation empowering it to prescribe rules governing the form and arrangement of tariffs. . . . The joint committee has approved some 14 technical proposals . . . and these reforms will be reflected in tariffs as they are reissued. It should be emphasized that these approved proposals are not recommendations. They are inviolate rules with which the tariff-maker must comply."

Mr. Carpi followed Mr. Peters with brief remarks wherein he warned that rapidly worked miracles were not to be expected on the simplification problem which 'must be tackled continuously and persistently." At the same

CONVENTION TRAVEL HEADQUARTERS for Republicans and Democrats alike in this combination ticket office and lounge sponsored by the passenger roads of Chicago and the Pullman Company. During busy convention hours, passenger officers and representatives of the sponsoring roads rotate on duty as hosts. Actual ticket sales and space reservations are handled at the counter in the rear by sellers from the staff of the Chicago Hotels Ticket Offices. Furnishings of the lounge include three television sets so convention-goers won't miss a minute of their "Big Show."

time, Mr. Carpi said that "substantial progress" has already been made.

The "biggest hurdle," he continued, was to get an effective organization. "We have it now," Mr. Carpi added. He proceeded to pay tribute to the Research Group's chairman, Charles S. Baxter, saying: "Mr. Baxter is resourceful and energetic, and with him leading the parade, I'm sure we'll arrive."

In the absence of I.C.C. Chairman Alldredge, Commissioner Splawn spoke briefly. He was sure, he said, that the commission's Division 2 would give any proposed changes in the tariff rules "the consideration they deserve." The commissioner went on to congratulate the railroad and shipper committees on the progress already made. He also said:

"We wish you Godspeed in this effort. We have confidence that you will bring forth something constructive and worthwhile."

Money for I.C.C. And Other Agencies

Appropriations totaling $11,003,500 for the Interstate Commerce Commission, $2,200,000 for the Defense Transport Administration, and $1,130,000 for the National Mediation Board and National Railroad Adjustment Board are provided in appropriation acts which have been signed by President Truman. The acts were passed by Congress in the closing days of the recent session, and the appropriations involved are for the current fiscal year which began July 1.

Other appropriation acts, also passed in the session's closing days and signed by the President, provide fiscal 1953 funds of $359,000,000 for the Bureau of Public Roads, $141,231,219 for the Civil Aeronatuics Administration, and $236,788,800 for rivers and harbors work of the Army's Corps of Engineers.

Also, there was provided for the Railroad Retirement Board the "indefinite" appropriation of amounts collected in fiscal 1953 under the Railroad Retirement Tax Act. Out of such collections, the board was authorized to use $6,207,000 for administering the retirement system. From collections under the Railroad Unemployment Insurance Act, the board will obtain other funds for administering the unemployment insurance system.

The $11,003,500 provided for the I.C.C. compares with $11,778,000 recommended in the President's budget. The amount appropriated includes $9,319,500 for the commission's "general expenses," a budgetary grouping which embraces most of the commission's activities; $974,500 for "railroad safety" work; and $709,500 for locomotive inspection.

The $2,200,000 provided for D.T.A. represented a cut of $600,000 from the budget estimate, while the Mediation Board-Adjustment Board total of $1,130,000 was what the budget proposed.

The $359,000,000 appropriated for the Bureau of Public Roads includes $325,000,000 for the federal-aid highway program, $18,000,000 for forest highways, $15,000,000 for access roads to defense facilities, and $1,000,000 for the Inter-American highway. The $141,231,219 provided for C.A.A. includes a "salaries-and-expenses" item of $105,594,000, a substantial part of which will be spent for operation of the federal airways system. Also in the C.A.A. appropriation are $19,821,154 for the federal-aid airport program, $11,091,499 for establishment of air navigation facilities, and $1,750,000 for air navigation development work.

The $236,788,800 provided for rivers and harbors work of the Army engineers includes $158,435,800 for new construction and $73,458,900 for operation and maintenance of existing works. The former includes $98 million to be spent on locks and dams in Oregon and Washington—$63 million for the McNary lock and dam, $20 million for The Dalles lock and dam, and $15 million for Chief Joseph dam. Another $15 million has been allocated to Old Hickory and Cheatham locks and dams on the Cumberland river, while about $13 1/3 million will be spent on the Jim Woodruff and Buford locks and dams on the Apalachicola, Chattahoochee and Flint rivers.

Freight Car Loadings

Loadings of revenue freight in the week ended July 12 totaled 572,387 cars, the Association of American Railroads announced on July 17. This was an increase of 124,991 cars, or 27.9 per cent, compared with the previous week; a decrease of 206,921 cars, or 26.6 per cent, compared with the corresponding week last year; and a decrease of 217,019 cars, or 27.5 per cent, compared with the equivalent 1950 week.

Loadings of revenue freight for the week ended July 5 totaled 447,396 cars; the summary for that week, compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, July 5

District	1952	1951	1950
Eastern	72,885	96,687	95,192
Allegheny	59,261	121,611	113,944
Pocahontas	15,301	18,680	17,583
Southern	85,814	90,204	85,631
Northwestern	54,734	115,641	101,513
Central Western	109,661	96,255	87,722
Southwestern	49,740	49,081	52,325
Total Western Districts	214,135	260,977	241,560
Total All Roads	447,396	588,159	553,910
Commodities:			
Grain and grain products	59,727	39,468	43,114
Livestock	4,657	6,178	5,048
Coal	24,108	27,503	26,154
Coke	3,290	14,074	13,421
Forest products	32,376	30,686	31,477
Ore	9,129	84,109	70,379
Merchandise l.c.l.	56,539	62,037	64,482
Miscellaneous	257,570	324,104	299,835
July 5	447,396	588,159	553,910
June 28	649,172	821,615	783,520
June 21	643,860	832,942	809,971
June 14	631,043	826,883	805,876
June 7	684,243	813,326	796,041
Cumulative total 27 weeks	18,983,513	20,506,472	18,438,660

In Canada. Car loadings for the seven-day period ended July 7 totaled 71,930 cars, compared with 100,917 cars for the previous nine-day period, according to the Dominion Bureau of Statistics. Summaries for the period ended July 7 and the preceding period follow:

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
July 7, 1952	71,930	27,495
July 7, 1951	72,182	31,371
June 30, 1952	100,917	40,318
Cumulative Totals		
July 7, 1952	2,082,813	921,393
July 7, 1951	2,121,670	955,844

D.P.A. Allots Aluminum And Copper But No Steel

The Defense Production Administration has announced fourth-quarter allotments of copper and aluminum, but deferred action on steel allocations, pending settlement of the steel strike.

Henry H. Fowler, D.P.A. Administrator, said steel allotments for the fourth quarter "will not be established until after the steel work stoppage ends, and it is possible to measure the production loss and develop the best means of coping with the situation." According to Mr. Fowler, the strike has cost the nation about one-half of a quarter's production of steel.

N.P.A.'s Railroad Equipment Division, which handles freight car and locomotive production, has been allocated 86,300,000 pounds of copper and 5,135,000 pounds of aluminum for the fourth quarter. This compares with 86,323,000 pounds and 4,973,000 pounds, respectively, in the third quarter.

Meanwhile, Acting Defense Mobilizer John R. Steelman has issued the sixth quarterly report of the Office of Defense Mobilization. This report again calls for a freight car fleet of 2,168,000 cars by mid-1954. Attainment of this goal requires construction of 436,000 new cars during the four-year period from mid-1950, the report said.

Dr. Steelman said the steel shutdown will postpone indefinitely any decontrol of steel. Hopes of removing steel from all controls early in 1953 have been abandoned, and the supply of this metal "will remain tight for some months longer," Dr. Steelman reported.

"Moreover, a further loss of steel is in prospect for next winter. Iron miners in the upper Great Lakes region and dock workers in the lower lake ports left their jobs along with the workers in the steel plants," he said. "As a result, little ore was discharged at the ports during most of June, and the mills will consequently have far less than their normal 30 million ton stockpile when the lakes freeze over and ship operations are halted."

Third Quarter Loadings Seen Down 1.2 Per Cent

Freight car loadings in the third quarter of 1952 are expected to be 1.2 per cent below those in the same period in 1951, according to estimates of the 13 regional Shippers Advisory Boards.

On the basis of those estimates, load-

THE GAS TURBINE LOCOMOTIVE built by Westinghouse-Baldwin has completed a series of experimental runs on the Missouri-Kansas-Texas with what Katy officers describe as "very satisfactory results." Between April 18 and July 1, the 4,000-hp. locomotive rolled up a total of 26,000 miles handling Trains 6 and 7 between Parsons, Kan., and Denison, Tex. Upon completion of the tests it was given a detailed inspection at the Parsons shops prior to taking on another assignment elsewhere. Of particular interest to Baldwin and Westinghouse engineers was the locomotive's operation in high, ambient temperatures of "hog back" running through the states of Kansas, Oklahoma and Texas.

ings of the 32 principal commodity groups will be 8,090,936 cars in the third quarter of 1952, compared with 8,189,583 actual loadings for the same commodities in the corresponding period of last year. Seven boards estimated an increase and six a decrease in loadings for the third quarter of 1952 compared with the same period in 1951.

The tabulation shows actual loadings for each district in the third quarter of 1951, the estimated car loadings for the third quarter of 1952, and the percentage of change.

Shippers Advisory Board	Actual Loadings, Third Quarter 1951	Estimated Loadings, Third Quarter 1952	Per Cent Increase
New England	107,699	105,822	1.7 dec.
Atlantic States	832,291	825,809	0.8 dec.
Allegheny	981,170	981,891	0.07
Ohio Valley	1,017,892	939,944	7.7 dec.
Southeast	928,124	931,652	0.4
Great Lakes	670,240	680,093	1.5
Central Western	284,716	293,798	3.2
Mid-West	934,353	916,656	1.9 dec.
Northwest	874,308	792,383	9.4 dec.
Trans-Missouri-Kansas	385,767	430,726	11.7
Southwest	520,122	514,072	1.2 dec.
Pacific Coast	386,112	407,863	5.6
Pacific Northwest	266,789	270,227	1.3
TOTAL	8,189,583	8,090,936	1.2 dec.

The boards expect an increase in the loading of 17 of the commodities listed and a decrease in 15. Commodities for which increases are estimated and the amount of increase include: Frozen foods, fruits and vegetables, 19.8 per cent; potatoes, 9.2 per cent; grain, 5.8 per cent; sugar, syrup and molasses, 4.7 per cent; metals, other than iron and steel, 4.4 per cent; machinery and boilers, 3.7 per cent; chemicals and explosives, 3.6 per cent; iron and steel, 3.3 per cent; livestock, 2.8 per cent; fertilizers of all kinds, 2.8 per cent; gravel, sand and stone, 2.2 per cent; petroleum and petroleum products, 1.8 per cent, and cement, 1.3 per cent.

Commodities for which decreases are estimated include: Cotton, 16.4 per cent; automobiles and trucks, 14.8 per cent; cottonseed, soy bean-vegetable cake and meal, except oil, 9.5 per cent; hay, straw and alfalfa, 8.4 per cent; paper, paperboard and prepared roofing, 4.2 per cent; fresh vegetables, other than potatoes, 4.1 per cent; coal and coke, 4.1 per cent; agricultural implements and vehicles, other than automobiles, 3.3 per cent; ore and concentrates, 3.2 per cent; poultry and dairy products, 2.8 per cent; brick and clay products, 2.4 per cent; lumber and forest products, 2.3 per cent; fresh fruits, other than citrus, 1.9 per cent, and lime and plaster, 1.6 per cent.

New I. C. C. Members Get Assignments

As its two new members assumed their duties last week, the Interstate Commerce Commission made several changes in its organization and assignment of work. The new members are Commissioners Anthony F. Arpaia and Martin K. Elliott.

The new assignments to divisions of the commission made Mr. Elliott a member of Division 2, which handles rate, tariff and valuation matters, while Mr. Arpaia went to Division 5, which handles motor carrier matters. Other members of Division 2 are its chairman, Commissioner Alldredge, who is also chairman of the commission, and Commissioner Splawn. Other members of Division 5 are Commissioner Lee, its chairman, and Commissioner Cross.

Members of Division 1, the administrative division, which also handles such matters as accounts, enforcement and the institution of special investigations, are Commissioners Mahaffie chairman), Lee and Mitchell. The commission's chairman (Mr. Alldredge) also serves, ex-officio, as a member of this division.

Members of Division 3, which alternates with Division 2 on rate matters and also handles service and safety matters, are Commissioners Patterson (chairman), Johnson and Knudson.

Members of Division 4, which handles finance matters, are Commissioners Mahaffie (chairman), Johnson and Mitchell.

Administrative supervision of the commission bureaus listed below has been reassigned as indicated: Bureau of Motor Carriers, Commissioner Lee; Bureal of Formal Cases, Commissioner Cross; Bureau of Water Carriers and Freight Forwarders, Commissioner Johnson; Bureau of Valuation, Commissioner Elliott; Bureau of Informal Cases, Commissioner Arpaia.

The commission has also reduced the number of its committees from two to one, having combined the Committee on Rules and Reports with the Legislative Committee under the title Committee on Legislation and Rules. Members of the committee are Commissioners Splawn (chairman), Mahaffie and Cross.

Bills Signed by President

President Truman has signed the act which will set up, under Interstate Commerce Commission jurisdiction, arrangements for the filing, for recording purposes, of equipment trust agreements and other documents evidencing or relating to the lease, mortgage, conditional sale or bailment of equipment. The bill embodying the legislation was S.3161 which was enacted during the closing days of Congress' recent session.

The President has also signed S.2360, which raises the maximum

CAR SURPLUSES, SHORTAGES

Average daily freight car surpluses and shortages for the week ended July 12 were announced by the Association of American Railroads on July 17 as follows:

	Surplus	Shortage
Plain Box	8,744	1,044
Auto Box	570	0
Total Box	9,314	1,044
Gondola	9,534	145
Hopper	22,253	212
Covered Hopper	78	0
Stock	2,279	0
Flat	9	96
Refrigerator	2,845	0
Other	1,155	0
	47,467	1,497

limit on securities that a motor carrier may issue without authority from the I.C.C. This, too, was an "eleventh-hour" enactment by Congress. (*Railway Age*, July 14, page 11.)

Fire Destroys CNR'S Jasper Park Lodge

The Canadian National's three-story Jasper Park Lodge, said to be the world's largest log building, at Jasper Park, Alta., was reportedly completely destroyed by fire on the night of July 16, with an estimated loss of approximately $1 million.

Most of the 540 guests at the resort were housed, however, in the 54 cabins which surround the lodge. A company spokesman said it was hoped operation could be continued through provision of temporary kitchen and dining room facilities.

Although some 300 people were reported to have been in the lodge when the fire broke out, about 9:45 p.m., there was no loss of life and the only person seriously injured was Alfred Peters, secretary to the hotel manager.

Pullman Co., O.R.C. Agree To Mediation of Dispute

Officers of the Pullman Company in Chicago were notified early on July 17 that officers of the Order of Railway Conductors in Washington, D. C., had agreed to submit their wage dispute to the National Mediation Board. The company had accepted the board's offer to mediate late the previous day.

The O.R.C. had ordered a strike of all its Pullman conductors to begin July 29 at 7 A.M. The order also called for railroad conductors to halt work on any train handling Pullman sleeping and parlor cars. The dispute has narrowed down to a wage differential of 1.43 cents — the brotherhood demanding a 12.5 cent-an-hour increase for its members and the company offering 11.07 cents an hour.

The strike, now postponed because of the Mediation Board's intervention, would have stranded Democratic convention-goers in Chicago insofar as sleeping car service is concerned.

SILVER-PLATED SPIKES, driven home by John E. Tilford (left), president of the Louisville & Nashville, and C. H. Linder, general manager of the General Electric Company's new plant at Louisville, Ky., marked completion of a 5½-mile industrial development line that runs eastward from the road's Strawberry yard to the new G.E. plant known as "Appliance Park." While the line actually connects the new G.E. plant with the L&N main line, the road has acquired property along the route for industrial development purposes. The line is designed to handle the heavy traffic expected when the G.E. plant reaches its full employment level (about 15,000) in 1955. Construction work included three ballast deck trestles, two of which are 60 feet long. The cost of the project, including both the line and the real estate purchases, has been estimated at $900,000.

N. Y. WEIGHT-DISTANCE TAX ON TRUCKS UPHELD AGAIN

The New York state Court of Appeals has unanimously upheld New York's right to levy on trucks traveling the state's highways the weight-distance tax enacted by the 1951 session of the state legislature. The court approved the constitutionality of the law without opinion.

A spokesman for the trucking companies that had fought the tax said the ruling would be appealed to the United States Supreme Court on constitutional grounds.

The decision affirmed similar rulings in the state Supreme Court and the Appellate Division, and will insure for the state a source of revenue estimated to yield $10,000,000 a year.

Tariff Study Group Sends Out Tenth Questionnaire

The Railroads' Tariff Research Group has sent out the tenth of the series of questionnaires whereby it is seeking views of interested parties on ways and means of simplifying and otherwise improving tariffs.

Questionnaire No. 10 asks this question: Should (1) cumulative tables of or indexes to numbered items in supplements be published only when a *complete* table or index can be shown, or (2) should certain smaller supplements, issued subsequent to the larger supplements, also carry a table or index of items published only in such subsequent supplements?

EQUIPMENT AND SUPPLIES

FREIGHT CARS

The **Atlantic Coast Line** has ordered 12 50-ton air dump cars from the Eddystone Division of Baldwin-Lima-Hamilton Corporation.

The **Chesapeake & Ohio** has ordered 400 70-ton and 300 50-ton gondola cars from the American Car & Foundry Co. at an estimated cost of $4,360,000. Delivery is scheduled for the second quarter of 1953. An inquiry by the C&O for 350 50-ton and 400 70-ton gondola cars was reported in *Railway Age* of July 7, page 15.

The **Kennecott Copper Corporation** has ordered 55 90-ton alloy steel air dump cars with roller bearing trucks from the Eddystone Division of Baldwin Lima-Hamilton Corporation.

COMMUNICATIONS

The **New York, Chicago & St. Louis** has ordered from the Bendix Radio division of Bendix Aviation Corporation two-way mobile, portable and fixed station communications equipment costing over $140,000. The order is said to be the largest placed this year by a railroad for radio equipment. Installation of the equipment will give the Nickel Plate complete radio communication from Bellevue, Ohio, to Buffalo, N. Y. End-to-end train communication will be provided with normal locomotive and caboose installations. Each caboose will be equipped with one-watt portable pack sets in addition to the 30-watt mobile unit. Eight new way station radio installations are being added to present facilities to provide complete train-to-wayside voice communication.

SUPPLY TRADE

The railroad department of the **Air Reduction Sales Company**, a division of the **Air Reduction Company**, has announced appointments of **S. S. Bruce, Jr.**, and **J. S. Stevens** as zone managers, eastern region, with headquarters at Philadelphia and Waycross, Ga., respectively.

The **Apex Railway Products Company** has announced acquisition of a controlling interest in the **M. & J. Diesel Locomotive Filter Corp.**, of Chicago. There will be no change in the present operation of the M. & J. organization; **Jack P. Morris**, president, will continue in his present capacity, as will **R. W. McNeily**, vice-president. **Edward F. Doherty**, chairman of the board of Apex, has been elected executive vice-president of the

C. Wesley Merritt, formerly engineer of wire and cables for the National Electric Products Corporation, who has been appointed sales manager of the newly organized railroad department.

M. & J. organization. **L. F. Duffy,** president of Apex, has been elected chairman of the M. & J. board of directors.

As reported on page 18 of last week's *Railway Age,* the following appointments in the Air Brake division of **Westinghouse Air Brake Company** have been announced: **C. O. DeWitt,** assistant manager of the eastern dis-

C. O. DeWitt

trict at New York; **R. B. Morris,** eastern district engineer, New York; and **J. G. Rees** and **D. G. Blaine,** representatives, western district, at Chicago.

Mr. DeWitt, a graduate of the Case School of Applied Science, joined the company in 1926, serving on the engineering staff at Wilmerding, Pa., until his promotion to assistant to district engineer, New York, in 1930. He has been district engineer at New York since 1941.

Mr. Morris has served on the New York district's engineering staff since 1941, when he was assigned to Philadelphia as an engineer. He joined Westinghouse Air Brake immediately after graduating from Pennsylvania State College in 1937. Before his present appointment he was assistant district engineer.

J. G. Rees

A service engineer in the western district at Chicago since February 1948, Mr. Rees joined the company in 1946

R. B. Morris

after graduating from Cornell University. He worked in the Wilmerding engineering staff in 1941. He served in

D. G. Blaine

the commercial engineering division at the home office and moved to Chicago in 1947 as service engineer.

Thomas B. Wood, Jr., who has joined the Ellcon Company as a sales assistant, as announced on page 18 of last week's *Railway Age.* Mr. Wood, formerly with the National Pneumatic Company, will be engaged in sales to railroads and transit companies.

Mr. Blaine is a graduate of Purdue University and joined the Wilmerding engineering department before his assignment to Chicago.

Arthur C. Bryan has been appointed vice-president in charge of sales for the **National Carbon Company,** a division of **Union Carbide & Carbon Corp.** Mr. Bryan joined National Carbon in 1935 as an industrial salesman in the Chicago office. In 1940 he was appointed a district manager in the New York office, later moving to Cleveland as assistant manager of the Carbon sales division there. Subsequently he was division manager of the Kansas

Arthur C. Bryan

City sales office. Returning to New York as assistant general sales manager, Mr. Bryan was promoted to general sales manager in 1949.

Ralph C. Gough has been appointed special representative in the New England area for the **Joseph Dixon Crucible Company.**

J. W. Horne has been appointed manager of the **Graybar Electric**

(Continued on page 56)

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1952

Name of Road		Average mileage operated during period	Operating Revenues				Operating Expenses												Net from railway operation	Railway tax accruals	Net railway operating income	
							Maint. Way and Structures			Maint. Equipment							Operating ratio					
			Freight	Pass.	Total 1952	Total (inc. misc.) 1951	Total 1952	Total 1951	Deprec. and Retirements	Total 1952	Total 1951	Deprec. and Retirements	Traffic	Transportation	Total 1952	Total 1951	1952	1951			1952	1951
Akron, Canton & Youngstown	May	171	$481	....	$493	$484	$74	$69	$6	$46	$50	$16	$39	$137	$330	$322	67.0	66.5	$163	$72	$68	$52
	5 mos.	171	2,300	....	2,354	2,313	358	334	33	273	220	78	182	691	1,661	1,556	70.6	67.3	693	299	304	274
Atchison, Topeka & Santa Fe System	May	13,072	37,362	$5,299	47,222	47,826	7,224	7,900	664	9,595	9,368	1,665	1,195	15,760	35,830	36,305	75.9	75.9	11,392	6,569	4,064	4,369
	5 mos.	13,073	192,543	23,617	238,582	230,886	33,565	34,283	3,341	45,821	45,320	8,318	5,768	76,865	172,376	170,602	72.3	73.9	66,206	38,808	26,645	24,809
Atlanta & St. Andrews Bay	May	82	262	2	272	317	39	42	5	22	20	4	9	60	145	147	53.2	46.2	127	64	39	49
	5 mos.	82	1,469	7	1,517	1,495	181	180	15	115	98	20	44	316	731	687	48.2	45.9	786	412	245	237
Atlanta & West Point	May	93	267	45	361	396	46	57	5	56	53	11	15	169	311	329	86.1	83.1	50	30	7	14
	5 mos.	93	1,456	237	1,946	1,907	242	257	27	297	276	57	75	783	1,522	1,573	78.2	82.5	424	226	126	61
Western of Alabama	May	133	305	43	389	396	52	58	9	81	60	15	16	142	315	305	80.9	76.9	74	35	40	33
	5 mos.	133	1,506	229	1,943	1,983	247	297	34	347	305	66	79	705	1,492	1,522	76.8	76.7	450	256	181	172
Atlantic & Danville	May	205	170	....	172	156	40	28	2	11	16	5	11	53	127	119	73.8	76.2	45	10	13	11
	5 mos.	205	829	....	841	765	195	140	9	55	48	24	57	261	626	564	74.4	73.7	216	49	69	72
Atlantic Coast Line	May	5,472	12,507	1,425	14,908	13,577	2,600	2,619	127	2,866	2,568	514	356	5,052	11,453	11,274	76.8	83.0	3,455	1,950	1,122	734
	5 mos.	5,472	61,789	10,945	78,520	69,325	11,456	15,025	657	13,486	12,568	2,616	1,818	25,528	55,528	58,036	70.7	83.7	22,993	14,250	6,845	2,977
Charleston & Western Carolina	May	343	605	2	622	606	146	150	5	105	92	39	18	190	472	462	75.9	76.1	150	70	70	65
	5 mos.	343	2,822	19	2,924	2,723	679	682	20	533	405	192	87	874	2,237	2,058	76.5	75.6	686	305	342	305
Baltimore & Ohio	May	6,187	32,570	2,214	37,482	39,085	4,617	5,238	410	7,341	8,403	976	854	14,326	28,671	31,602	76.5	80.9	8,811	3,532	4,204	3,542
	5 mos.	6,187	162,799	10,350	185,405	181,118	23,911	23,200	2,039	39,196	40,924	4,856	4,369	73,218	148,282	149,700	80.0	82.7	37,123	14,310	18,549	14,675
Staten Island Rapid Transit	May	29	248	52	304	287	62	56	13	24	41	—4	2	144	261	264	86.0	92.0	42	36	—26	—24
	5 mos.	29	1,262	254	1,532	1,440	264	264	60	173	187	10	8	726	1,320	1,322	86.2	91.8	212	181	—89	—130
Bangor & Aroostook	May	602	821	30	888	1,002	250	189	16	228	216	73	19	248	801	756	90.2	75.4	87	82	109	127
	5 mos.	602	6,566	178	6,977	5,353	1,220	898	81	1,205	884	343	97	1,827	4,653	3,487	66.7	65.1	2,324	1,140	1,098	804
Bessemer & Lake Erie	May	212	3,013	1	3,032	3,223	299	200	18	652	370	105	18	548	1,618	1,261	53.3	39.1	1,415	948	579	946
	5 mos.	212	9,610	3	9,719	10,020	1,096	878	100	3,209	2,850	490	89	2,337	7,206	6,643	74.1	66.3	2,513	2,085	1,344	2,093
Boston & Maine	May	1,701	5,475	955	7,379	7,616	1,339	1,346	185	1,142	1,201	180	121	3,064	5,988	6,166	81.2	81.0	1,391	647	429	442
	5 mos.	1,701	27,973	4,687	36,729	36,580	6,689	6,209	903	5,680	5,972	846	581	15,976	30,551	30,157	83.2	82.4	6,178	2,939	1,582	1,483
Cambria & Indiana	May	35	148	....	148	104	17	16	1	86	69	18	....	20	130	115	87.9	111.1	18	90	74	50
	5 mos.	35	760	....	760	687	82	65	4	434	409	85	1	123	678	652	89.2	94.9	82	370	286	296
Canadian Pacific Lines in Maine	May	234	351	46	429	409	143	127	5	68	81	8	8	163	396	405	92.3	99.1	33	27	—45	—72
	5 mos.	234	3,291	263	3,700	3,413	597	481	25	549	456	42	38	1,303	2,557	2,201	69.1	64.5	1,143	147	564	735
Canadian Pacific Lines in Vermont	May	90	190	12	218	238	71	63	4	30	50	....	7	112	227	248	104.2	104.0	—9	12	—73	—81
	5 mos.	90	968	71	1,132	1,121	328	258	19	166	166	1	31	588	1,153	1,070	101.8	95.4	—21	65	—354	—288
Central of Georgia	May	1,786	3,248	202	3,762	3,827	593	735	41	627	665	103	135	1,567	3,113	3,424	82.7	89.5	649	234	360	122
	5 mos.	1,786	15,765	1,160	18,744	18,800	3,004	3,463	215	3,036	3,171	508	658	7,745	15,448	16,320	82.4	86.8	3,296	1,593	1,309	642
Central of New Jersey	May	411	2,827	476	3,587	3,597	495	517	75	673	595	77	57	1,784	3,182	3,239	88.7	90.0	405	403	—341	—363
	5 mos.	411	13,942	2,299	17,766	17,625	2,398	2,353	364	3,250	3,073	407	292	9,123	15,897	15,856	89.5	90.0	1,869	2,063	—2,026	—2,005
Central of Pennsylvania	May	207	1,709	4	1,765	1,685	180	148	13	370	371	75	26	442	1,058	1,087	60.0	64.5	707	200	751	791
	5 mos.	207	8,217	25	8,510	7,723	892	818	71	1,898	1,940	366	128	2,377	5,503	5,560	64.7	72.0	3,007	601	3,712	3,257
Central Vermont	May	422	850	56	976	1,012	224	224	16	186	169	12	17	428	895	847	91.7	83.7	81	45	—34	90
	5 mos.	422	4,009	304	4,640	4,610	875	791	84	854	807	62	80	2,124	4,148	3,824	89.4	83.0	492	220	—27	292
Chesapeake & Ohio	May	5,116	29,448	791	31,884	32,083	4,225	4,081	368	5,991	6,215	1,454	651	9,575	21,712	22,343	68.1	69.6	10,172	5,475	5,200	4,448
	5 mos.	5,116	141,863	3,555	152,432	144,395	20,824	19,231	1,710	30,973	27,543	6,973	3,074	48,968	109,999	104,431	72.2	72.3	42,432	22,024	22,446	18,610
Chicago & Eastern Illinois	May	868	2,181	248	2,730	2,816	359	395	29	458	405	122	116	1,017	2,121	2,110	77.7	74.9	609	196	316	344
	5 mos.	868	11,331	1,243	14,184	13,703	1,750	1,793	145	2,186	1,960	562	572	5,246	10,631	10,260	74.9	74.9	3,553	1,337	1,700	1,505
Chicago & Illinois Midland	May	130	506	....	519	825	13	101	8	41	183	21	27	171	293	570	56.5	69.0	226	102	94	123
	5 mos.	130	2,946	1	3,022	3,980	366	498	38	802	816	104	146	995	2,521	2,724	83.4	68.4	501	275	97	578
Chicago & North Western	May	7,915	13,218	1,814	16,945	17,206	2,769	2,878	310	3,140	3,420	737	347	7,820	14,899	15,518	87.9	90.2	2,046	1,062	421	375
	5 mos.	7,915	61,440	8,666	79,820	79,941	12,989	12,384	1,669	16,217	15,687	3,715	1,725	39,068	74,211	72,539	93.0	90.7	5,609	5,288	—1,516	126
Chicago, Burlington & Quincy	May	8,808	15,979	1,673	19,793	21,419	3,902	4,049	568	3,654	3,065	682	538	7,205	16,103	16,119	81.4	75.3	3,690	2,294	1,210	1,848
	5 mos.	8,812	83,579	7,531	101,720	107,271	14,694	14,003	2,394	17,162	15,823	3,464	2,380	37,339	75,640	74,339	74.4	69.3	26,080	14,729	9,704	13,437
Chicago Great Western	May	1,474	2,618	13	2,826	2,951	501	564	37	342	434	119	102	901	1,922	2,117	68.0	71.7	904	326	317	283
	5 mos.	1,474	13,446	65	14,406	14,351	2,353	2,282	224	1,972	2,054	592	507	4,767	9,987	10,042	69.3	70.0	4,419	1,553	1,531	1,367
Chicago, Indianapolis & Louisville	May	541	1,760	77	1,954	1,751	318	318	16	316	294	64	90	628	1,452	1,462	74.3	83.5	502	208	182	102
	5 mos.	541	8,157	342	9,071	8,812	1,590	1,513	98	1,336	1,408	316	443	3,109	6,951	6,979	76.7	79.2	2,112	850	764	621
Chicago, Milw., St. Paul & Pacific	May	10,671	17,525	1,517	21,408	22,281	4,305	3,504	392	4,661	4,707	847	468	8,971	19,470	19,072	90.9	85.6	1,939	1,072	286	902
	5 mos.	10,671	87,088	7,502	105,893	104,966	16,062	13,748	1,903	23,412	21,921	4,549	2,350	45,519	92,585	89,865	87.4	85.6	13,308	7,613	3,666	3,912
Chicago, Rock Island & Pacific	May	7,916	12,639	1,678	15,941	16,822	2,329	2,415	239	2,794	2,641	509	488	6,057	12,472	12,934	78.2	76.9	3,469	1,506	1,427	1,336
	5 mos.	7,916	68,843	8,316	84,977	83,631	10,443	9,469	1,209	14,403	13,246	2,447	2,445	32,005	63,358	62,388	74.6	74.6	21,619	9,536	8,780	7,286
Chicago, St. Paul, Minn. & Omaha	May	1,617	2,059	168	2,495	2,667	453	514	46	417	472	88	64	1,276	2,333	2,584	93.5	96.9	162	179	—195	—275
	5 mos.	1,617	11,039	859	13,183	12,963	2,097	2,110	226	2,175	2,241	442	325	7,096	12,341	12,722	93.6	98.1	841	914	—1,151	—1,580
Clinchfield	May	317	2,045	1	2,056	2,015	336	335	18	334	334	81	42	428	1,174	1,228	57.1	61.0	883	214	819	710
	5 mos.	317	10,064	5	10,121	10,182	1,430	1,414	88	1,642	1,626	407	205	2,288	5,741	5,648	56.7	55.5	4,380	1,068	3,943	4,265

Table continued on second left-hand page

Another *SHERWIN-WILLIAMS* "FIRST"...

HOT SPRAY FINISHING FOR FREIGHT CARS

TWO-coat protection... in ONE application!
A NEW, TIME-SAVING SHORTCUT TO
• MORE shop capacity
• SHORTER lay-ups for cars
• BETTER, longer-lasting appearance...faster!

TWO-coat protection in ONE application . . . out-of-service time for refinishing freight cars cut nearly in HALF . . . a higher-gloss, more durable finish obtained more *uniformly*, even under many adverse weather or temperature conditions!

These and other benefits are now offered railroads and car builders by Sherwin-Williams Hot Spray Synthetic Freight Car Enamel—another product of Sherwin-Williams leadership in the development of protective coatings for the Railway Industry. Utilized widely in finishing of quality furniture, and in other fields, the Hot Spray process, with its many advantages, is introduced now after four years of successful field testing for railway service.

Hot Spray applies twice as much finish coat material in a single operation . . . does away with drying time between finish coats . . . nearly doubles shop capacity . . . relieves traffic department bottlenecks. Ask for full details. Write The Sherwin-Williams Co., Transportation Dept., Cleveland 1, Ohio.

One of 250 Rock Island steel freight cars finished with Sherwin-Williams Hot Spray Synthetic Freight Car Enamel in operational test at The Pullman-Standard Car Mfg. Co., Michigan City, Ind., in 1951. These and previous tests indicate a definite increased life expectancy for the finish.

SHERWIN-WILLIAMS
RAILWAY FINISHES

Winterproof your switches with G-E snowmelters

When weather threatens to tie you up, there's one *sure* way to keep switches open—a General Electric snowmelter system. Designed around the well-known Calrod* electric heating unit, this system puts safe heat right where you want it, when you need it—by merely pushing a button. G-E snowmelters have these advantages—

- cost only a few cents per hour per switch to operate,
- prevent ice from starting to form at vital points,
- operate at uniform temperatures,
- require minimum maintenance and attention,
- are always ready to start working whenever you need them.

Plan now for your winter snowmelting needs. Before you submit your 1953 budget, ask your General Electric representative for the full details on the G-E snowmelter system. *General Electric Company, Schenectady 5, New York.* 152-35

*Reg. Trade-mark

You can put your confidence in—

GENERAL ELECTRIC

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1952

Name of road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1952	1951	Operating Expenses: Maint. Way and Structures: Total 1952	Total 1951	Deprec. and Retirements	Maint. Equipment: Total 1952	Total 1951	Deprec. and Retirements	Traffic	Transportation	Total 1952	Total 1951	Operating ratio 1952	Operating ratio 1951	Net from railway operation	Railway tax accruals	Net railway operating income 1952	Net railway operating income 1951
Colorado & Southern	May	736	1,131	68	1,323	1,149	182	144	15	184	219	31	29	450	900	940	68.1	81.8	422	248	161	38
	5 mos.	736	5,435	393	6,465	6,163	713	693	93	1,038	967	172	145	2,342	4,527	4,468	70.0	72.5	1,938	1,142	716	521
Ft. Worth & Denver	May	804	1,305	144	1,603	1,589	261	363	25	237	249	32	61	688	1,338	1,364	83.5	85.8	265	62	116	67
	5 mos.	804	7,818	756	9,400	8,516	1,243	1,281	149	1,212	1,199	156	280	3,470	6,682	6,416	71.1	75.3	2,719	996	1,207	801
Colorado & Wyoming	May	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
	5 mos.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Columbus & Greenville	May	168	144	....	152	173	38	47	3	30	35	6	4	46	136	156	89.7	90.1	16	21	6	6
	5 mos.	168	783	....	816	914	176	211	18	151	149	30	20	245	686	731	84.0	79.9	131	118	44	85
Delaware & Hudson	May	793	4,566	141	4,858	5,294	824	862	119	950	1,036	144	85	1,736	3,789	4,089	78.0	77.2	1,069	586	503	614
	5 mos.	793	22,745	806	24,269	24,423	3,209	3,018	342	4,966	4,912	715	410	9,207	18,821	18,579	77.2	76.1	5,547	2,910	2,893	2,756
Delaware, Lackawanna & Western	May	962	6,480	808	8,057	7,981	856	949	143	1,467	1,463	295	168	3,326	6,093	6,277	75.6	78.7	1,963	1,031	943	799
	5 mos.	964	30,931	4,060	38,787	36,301	4,020	3,889	665	7,238	6,807	1,462	827	16,901	30,343	29,528	78.2	81.3	8,444	4,445	4,081	2,675
Denver & Rio Grande Western	May	2,333	5,803	295	6,340	6,116	1,205	995	92	1,068	1,057	232	190	2,073	4,821	4,500	76.0	73.6	1,519	811	707	752
	5 mos.	2,333	28,866	1,297	31,286	29,492	4,155	3,480	446	5,701	5,431	1,146	880	10,477	22,645	20,804	72.4	70.5	8,641	4,823	3,796	4,203
Detroit & Mackinac	May	232	187	....	191	262	43	40	3	21	23	9	5	39	118	110	61.8	42.2	73	36	36	57
	5 mos.	232	752	2	777	971	215	200	13	99	104	41	21	191	577	541	74.2	55.7	200	119	97	158
Detroit & Toledo Shore Line	May	50	669	....	676	637	78	69	3	67	60	21	14	185	357	381	57.1	59.9	268	102	84	72
	5 mos.	50	3,326	....	3,380	3,347	376	354	18	307	285	88	72	1,000	1,822	1,847	53.9	55.2	1,558	593	503	384
Detroit, Toledo & Ironton	May	464	1,348	....	1,392	1,524	195	230	21	326	224	67	26	391	993	955	71.3	62.7	399	220	174	247
	5 mos.	464	7,364	2	7,753	8,316	963	1,008	123	1,831	1,241	323	141	2,059	5,277	4,810	68.1	57.8	2,477	1,303	1,039	1,478
Duluth, Missabe & Iron Range	May	567	6,569	1	7,634	7,329	564	615	75	628	663	78	9	1,991	3,337	3,419	43.7	46.7	4,297	499	3,789	3,335
	5 mos.	567	12,165	4	14,053	13,488	3,069	3,065	312	2,440	3,479	389	45	5,931	13,133	12,574	93.5	93.2	920	1,198	—108	120
Duluth, South Shore & Atlantic	May	539	624	6	668	725	120	147	7	139	123	20	23	237	536	584	80.2	80.6	132	29	106	98
	5 mos.	539	3,016	33	3,265	3,259	588	533	42	731	577	100	119	1,184	2,717	2,669	84.8	79.5	488	137	208	380
Duluth, Winnipeg & Pacific	May	175	377	1	383	400	83	77	4	74	62	2	6	234	400	324	104.4	80.8	—17	31	—73	—2
	5 mos.	175	2,890	5	2,925	2,960	377	333	21	396	318	11	27	1,255	2,689	1,666	71.4	72.4	836	211	250	186
Elgin, Joliet & Eastern	May	236	3,416	....	4,266	4,841	788	562	59	760	655	101	37	1,543	2,819	3,076	66.1	63.5	1,447	775	320	437
	5 mos.	236	17,434	....	21,760	22,189	1,957	2,068	156	3,790	3,747	501	167	8,359	14,816	14,309	68.1	64.5	6,944	3,167	1,185	1,585
Erie	May	2,242	12,918	626	14,703	15,271	2,258	2,269	226	2,355	2,350	472	354	5,862	11,562	11,886	78.6	77.8	3,141	1,427	1,298	1,435
	5 mos.	2,242	64,682	3,053	72,348	73,364	8,957	8,826	1,127	11,564	11,159	2,303	1,772	29,761	55,356	55,353	75.5	75.4	17,992	8,283	7,750	7,366
Florida East Coast	May	571	2,248	464	2,939	2,787	288	288	41	483	452	77	74	1,028	2,127	2,039	72.4	73.2	812	208	414	372
	5 mos.	571	12,012	4,317	18,061	15,357	1,737	1,712	203	2,526	2,282	381	371	6,069	11,842	10,754	65.6	70.0	6,219	2,066	3,113	2,389
Georgia Railroad	May	323	713	31	815	841	134	134	11	132	122	26	35	340	678	649	83.2	77.3	137	40	118	169
	5 mos.	323	3,577	169	4,090	4,075	611	611	45	635	615	129	166	1,680	3,278	3,141	80.2	77.1	812	199	708	803
Georgia & Florida	May	360	324	....	327	295	103	91	4	37	35	7	20	96	272	240	83.1	81.5	55	19	10	19
	5 mos.	360	1,458	....	1,479	1,441	426	417	18	170	163	37	89	435	1,203	1,158	81.3	80.4	276	92	73	97
Grand Trunk Western	May	952	4,203	185	4,730	5,075	840	838	47	861	965	91	78	2,095	4,033	4,057	85.3	79.9	697	307	167	429
	5 mos.	952	21,053	1,013	23,864	24,829	3,515	3,232	247	4,347	4,513	454	374	10,735	19,815	19,321	83.0	77.8	4,049	1,469	1,362	2,902
Can. Natl. Lines in New Engl.	May	172	155	3	182	225	62	58	9	39	51	....	3	124	243	265	133.8	117.9	—61	24	—119	—102
	5 mos.	172	955	23	1,207	1,178	324	264	45	283	238	1	13	747	1,461	1,272	121.0	108.0	—254	118	—588	—422
Great Northern	May	8,314	19,012	1,181	22,110	24,819	4,422	4,455	327	3,444	3,406	479	402	7,035	16,134	16,869	73.0	68.0	5,977	2,559	3,165	2,910
	5 mos.	8,314	79,550	5,586	92,389	91,644	17,474	16,783	1,501	18,870	17,205	2,979	1,969	35,212	77,579	74,359	84.0	81.1	14,810	8,715	4,802	5,675
Green Bay & Western	May	224	305	....	309	328	85	98	5	44	37	14	20	83	247	258	80.0	78.6	62	32	25	33
	5 mos.	224	1,511	....	1,558	1,767	341	411	26	194	177	71	105	426	1,144	1,193	73.5	67.5	413	228	158	267
Gulf, Mobile & Ohio	May	2,766	6,558	401	7,432	7,565	1,270	1,293	156	1,317	1,458	243	260	2,114	5,306	5,628	71.4	74.4	2,127	984	800	747
	5 mos.	2,833	32,905	1,985	37,353	35,989	6,074	5,798	506	6,508	6,726	1,197	1,275	10,812	26,394	26,546	70.7	73.8	10,960	5,142	4,194	3,650
Illinois Central	May	6,539	19,294	1,827	23,792	23,474	3,961	4,197	359	4,414	4,231	727	485	8,732	18,582	19,022	78.1	81.0	5,210	2,946	1,791	1,456
	5 mos.	6,539	101,544	9,345	123,834	119,976	19,424	19,079	1,759	21,831	21,457	3,641	2,462	45,969	94,770	93,507	76.5	77.9	29,064	16,490	10,259	13,210
Illinois Terminal	May	445	830	76	1,026	1,063	150	161	27	145	148	35	41	412	807	829	78.7	78.0	219	117	90	97
	5 mos.	456	3,984	384	4,894	4,833	743	716	133	772	736	171	206	2,042	4,032	3,872	82.4	80.1	862	481	314	373
Kansas City Southern	May	891	3,268	155	3,752	3,754	481	410	35	498	509	90	80	1,047	2,232	2,239	59.5	59.7	1,520	709	616	596
	5 mos.	891	17,424	736	19,828	18,783	2,210	1,912	159	2,324	2,310	422	431	5,636	11,206	10,612	56.5	56.5	8,621	4,199	3,334	3,239
Kansas, Oklahoma & Gulf	May	327	578	1	584	565	117	81	7	38	38	9	27	130	336	292	57.4	51.7	249	128	86	98
	5 mos.	327	2,964	3	2,994	2,846	438	258	30	205	181	43	133	648	1,547	1,231	51.6	43.3	1,447	740	528	662
Lake Superior & Ishpeming	May	156	536	....	653	520	66	66	9	48	55	11	2	120	250	257	36.7	49.6	403	88	320	152
	5 mos.	156	1,073	....	1,284	1,154	247	234	46	297	257	55	10	376	985	941	76.8	81.5	298	201	137	61
Lehigh & Hudson River	May	96	277	....	277	310	47	45	2	30	25	9	12	82	181	176	65.1	56.6	97	39	40	42
	5 mos.	96	1,372	....	1,375	1,394	213	198	12	149	124	43	64	427	906	836	65.9	59.9	469	193	188	208
Lehigh & New England	May	184	835	....	840	748	89	148	6	131	114	38	11	201	468	491	55.8	65.6	371	219	207	146
	5 mos.	184	3,311	....	3,338	3,373	352	513	32	641	571	184	58	926	2,156	2,224	64.6	65.9	1,182	737	726	661
Lehigh Valley	May	1,220	5,896	301	6,544	6,883	774	930	24	1,166	1,197	201	142	2,463	4,791	5,142	73.2	74.7	1,753	718	975	876
	5 mos.	1,220	29,642	1,656	33,089	31,604	3,844	4,011	446	5,504	5,857	1,011	710	12,617	23,924	24,529	72.3	77.6	9,165	4,045	4,919	3,750
Long Island	May	365	1,140	3,098	4,460	4,539	547	676	86	786	909	118	13	2,177	3,688	4,205	82.7	92.6	772	486	64	—206
	5 mos.	365	5,530	14,354	21,125	20,576	3,075	3,059	429	3,893	4,250	589	78	12,222	20,110	19,803	95.2	96.2	1,015	2,429	—2,541	—2,774

Table continued on next left-hand page

BIG JOB for welding . . .

and RADIOGRAPHY adds "OK"

Here you see the lower drum of a large stationary boiler. All seams of the shell are welded. So are the extensions and elbows. And every weld has been radiographed to prove it sound. For radiography would reveal any serious lack of fusion or gas porosities.

Knowing each weld to be sound, the designer of a pressure vessel can save weight, cut cost, and improve its efficiency.

This is why the use of radiography is widening the opportunities of welding—why it can increase your business.

If you would like to know more about how it can help you, get in touch with your x-ray dealer and talk it over.

EASTMAN KODAK COMPANY
X-ray Division, Rochester 4, New York

RADIOGRAPHY...

another important function of photography

Kodak
TRADE-MARK

REVENUES AND EXPENSES OF RAILWAYS

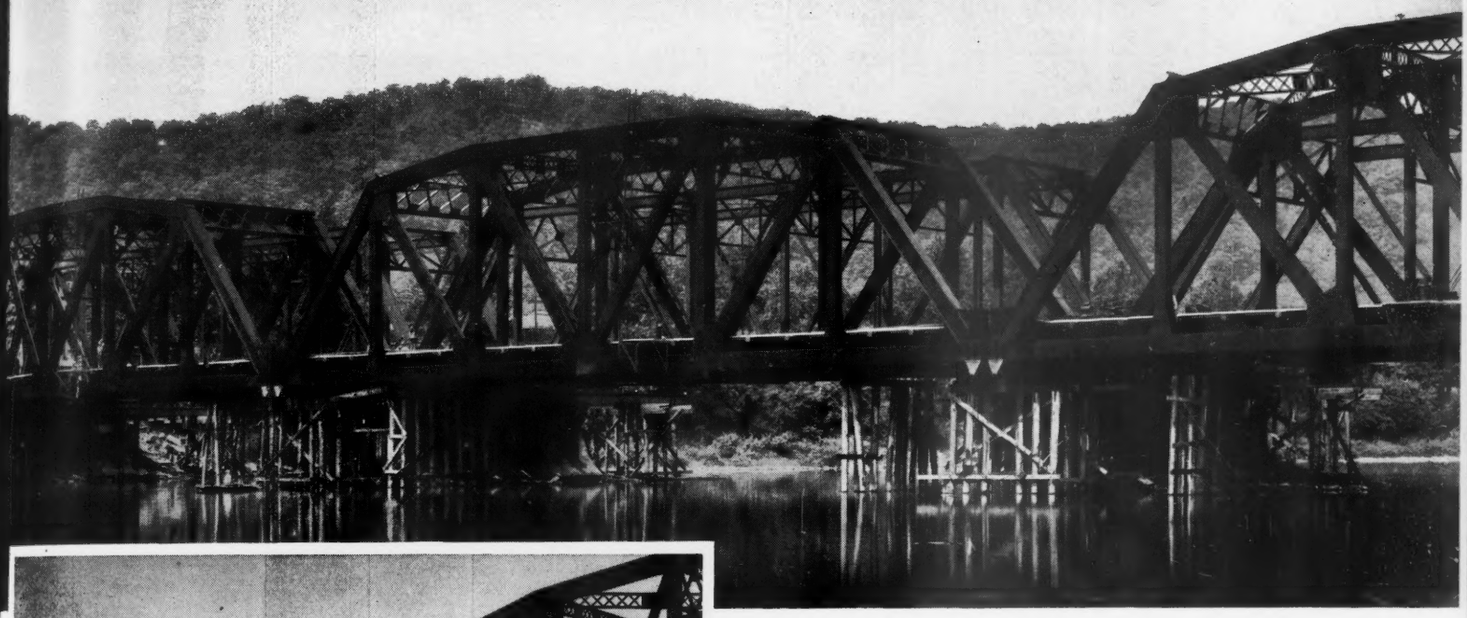
(Dollar figures are stated in thousands; i.e., with last three digits omitted)

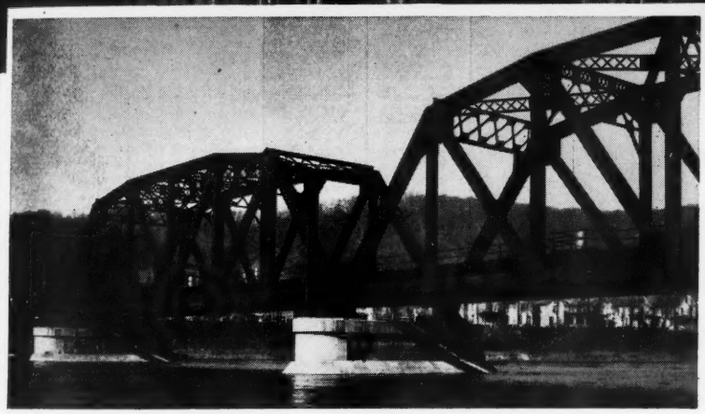
MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1952

Name of Road		Average mileage operated during period	Operating Revenues				Operating Expenses										Operating ratio		Net from railway operation	Railway tax accruals	Net railway operating income	
					Total (inc. misc.)		Maint. Way and Structures			Maint. Equipment												
			Freight	Pass.	1952	1951	Total 1952	Total 1951	Deprec. and Retirements	Total 1952	Total 1951	Deprec. and Retirements	Traffic	Transportation	Total 1952	Total 1951	1952	1951				
Louisiana & Arkansas	May	756	2,061	68	2,212	1,958	350	425	19	284	229	68	75	596	1,378	1,364	62.3	69.7	834	378	375	181
	5 mos.	756	10,131	317	10,879	9,741	1,732	1,882	104	1,305	1,123	344	357	2,904	6,667	6,363	61.3	65.3	4,212	1,991	1,901	1,091
Louisville & Nashville	May	4,765	16,099	1,060	18,383	18,552	2,647	2,751	218	4,139	4,104	668	342	6,883	14,689	15,005	79.9	80.9	3,694	2,446	1,752	1,402
	5 mos.	4,765	83,606	5,726	95,857	92,100	13,526	12,952	1,101	20,150	19,271	3,249	1,685	33,991	72,699	72,481	75.8	78.7	23,157	14,493	11,216	8,395
Maine Central	May	981	1,767	124	2,035	2,196	424	439	28	366	401	70	19	741	1,635	1,682	80.3	76.6	400	207	193	205
	5 mos.	981	10,562	593	11,903	11,149	2,088	1,929	134	1,950	1,903	344	103	4,054	8,583	8,070	72.1	72.4	3,321	1,693	1,302	1,242
Midland Valley	May	334	164	....	166	162	52	52	6	25	16	2	5	63	151	144	91.0	89.0	15	14	—13	—12
	5 mos.	334	807	....	820	879	258	205	31	107	79	13	25	310	734	627	89.5	71.3	86	81	—41	91
Minneapolis & St. Louis	May	1,406	1,637	5	1,703	1,761	344	376	25	284	276	79	122	587	1,445	1,418	84.8	80.5	259	141	128	95
	5 mos.	1,406	8,433	23	8,735	8,697	1,482	1,565	131	1,426	1,339	360	593	2,884	6,925	6,885	79.3	79.2	1,810	1,044	615	525
Minn., St. Paul & Sault Ste. Marie	May	3,224	3,385	61	3,667	3,907	777	893	46	694	691	96	74	1,342	3,011	3,194	82.1	81.7	656	251	393	468
	5 mos.	3,224	13,890	330	15,150	15,075	3,275	3,043	238	3,665	3,277	478	386	6,668	14,597	13,847	96.4	91.9	553	1,126	—621	57
Mississippi Central	May	148	248	....	252	230	40	40	2	27	35	3	13	64	154	159	61.1	68.8	98	50	36	27
	5 mos.	148	1,123	....	1,142	1,089	216	208	11	133	145	16	66	312	776	754	67.9	69.3	366	181	130	126
Missouri Illinois	May	172	444	....	447	487	83	64	4	68	62	20	8	127	294	272	65.7	55.8	153	76	74	79
	5 mos.	172	2,126	1	2,146	2,162	352	295	19	351	313	101	42	588	1,376	1,248	64.1	57.8	770	450	368	344
Missouri-Kansas-Texas Lines	May	3,242	5,616	333	6,514	6,289	1,002	1,010	108	972	966	228	245	2,387	4,919	5,025	75.5	79.9	1,595	688	647	417
	5 mos.	3,242	29,629	1,860	34,526	32,945	4,882	4,532	554	4,926	4,762	1,112	1,269	12,255	24,926	24,535	72.2	74.5	9,600	4,287	3,885	2,996
Missouri Pacific	May	6,950	16,341	1,047	19,433	19,508	3,576	3,434	254	3,766	3,806	708	468	7,277	15,726	15,866	80.9	81.3	3,706	1,285	1,915	1,825
	5 mos.	6,950	83,581	4,939	98,311	96,010	16,123	15,650	1,270	18,691	18,729	3,470	2,269	36,849	77,126	76,712	78.5	79.9	21,185	7,942	10,801	9,256
International-Great Northern	May	1,104	2,643	195	3,130	3,229	722	678	33	568	559	101	57	1,214	2,687	2,696	85.8	83.5	443	81	212	204
	5 mos.	1,104	13,700	937	16,032	15,615	3,340	3,349	184	2,813	2,660	500	290	6,193	13,297	13,096	82.9	83.9	2,734	679	1,284	1,080
Gulf Coast Lines	May	1,727	3,302	97	3,630	3,694	767	769	38	535	599	83	88	1,182	2,720	2,750	74.9	74.4	910	264	456	438
	5 mos.	1,727	17,522	449	19,125	18,406	3,669	3,772	223	2,679	2,864	548	442	5,999	13,505	13,811	70.6	75.0	5,620	2,437	2,197	1,878
Monongahela	May	178	721	....	724	796	91	94	11	86	97	8	1	249	440	459	60.9	57.7	283	53	70	123
	5 mos.	178	3,604	....	3,617	3,651	472	428	58	446	432	38	6	1,322	2,294	2,178	63.4	59.7	1,324	270	279	474
Montour	May	51	196	....	196	205	18	35	3	67	100	15	1	76	172	230	87.7	111.7	24	48	48	12
	5 mos.	51	1,028	....	1,029	1,042	103	101	13	410	427	85	4	442	1,010	1,014	98.1	97.3	19	204	204	145
Nashville, Chatt. & St. Louis	May	1,032	2,870	147	3,331	3,332	602	637	65	500	471	128	115	1,165	2,502	2,506	75.1	75.2	830	441	442	371
	5 mos.	1,032	14,457	767	16,813	15,956	2,782	2,644	251	2,441	2,298	620	567	5,712	12,099	11,797	72.0	73.9	4,714	2,397	2,312	1,953
New York Central	May	10,703	46,708	10,602	65,927	68,808	10,995	10,325	1,233	13,029	12,915	2,287	1,066	28,971	57,225	58,524	86.8	85.1	8,703	5,029	2,946	3,970
	5 mos.	10,711	238,608	50,437	330,281	327,986	44,472	44,621	4,879	70,340	69,295	11,103	5,342	151,280	287,691	290,464	87.1	88.6	42,590	25,575	11,830	3,760
Pittsburgh & Lake Erie	May	221	3,901	70	4,134	4,312	475	588	40	1,091	1,143	242	71	1,325	3,180	3,432	76.9	79.6	955	792	1,031	784
	5 mos.	221	19,182	387	20,523	20,292	2,410	2,525	208	5,807	5,673	1,177	363	7,190	16,899	16,874	82.3	83.2	3,624	2,989	4,224	3,556
New York, Chicago & St. Louis	May	2,184	12,383	165	13,098	13,568	1,523	1,464	135	2,131	2,345	360	309	4,677	9,037	9,375	69.0	69.1	4,062	2,118	1,851	2,036
	5 mos.	2,187	63,257	912	66,294	65,449	8,063	7,398	721	10,989	10,983	1,643	1,533	23,142	45,908	45,344	69.2	69.3	20,386	10,393	8,873	9,061
New York, New Haven & Hartford	May	1,793	7,789	4,108	13,319	13,435	2,120	2,270	271	2,098	2,192	375	201	5,572	10,689	11,043	80.2	82.2	2,631	1,082	709	530
	5 mos.	1,793	38,990	20,677	67,175	64,190	10,311	9,646	1,357	10,576	10,517	1,858	968	28,610	54,063	52,402	80.5	81.6	13,112	5,328	3,768	2,785
New York Connecting	May	21	313	....	335	286	111	98	25	27	19	....	....	87	229	190	68.3	66.3	106	83	29	56
	5 mos.	21	1,633	....	1,770	1,385	394	417	125	152	77	....	....	411	973	841	55.0	60.7	797	416	432	317
New York, Ontario & Western	May	541	565	2	586	682	119	131	23	82	88	23	26	263	521	557	88.9	81.7	65	37	—39	11
	5 mos.	541	2,703	2	2,806	3,068	536	518	116	413	431	114	129	1,301	2,533	2,624	90.3	85.5	272	177	—194	—83
New York, Susquehanna & Western	May	120	389	37	447	491	59	58	5	57	58	11	9	203	359	340	80.1	69.1	88	31	23	63
	5 mos.	120	1,973	192	2,279	2,337	283	263	28	308	267	56	44	999	1,775	1,663	77.9	77.1	505	158	185	267
Norfolk & Western	May	2,135	15,102	449	16,348	17,595	2,388	2,366	285	3,906	3,545	593	326	4,769	11,978	11,893	73.3	67.6	4,370	3,027	2,111	2,628
	5 mos.	2,135	77,927	2,125	84,474	81,139	11,634	11,233	1,476	19,484	16,972	2,920	1,497	25,524	61,138	57,328	72.4	70.7	23,336	16,315	10,930	11,486
Norfolk Southern	May	643	968	....	977	941	204	168	14	119	116	24	51	309	755	702	77.3	74.6	222	88	85	81
	5 mos.	643	4,848	....	4,925	4,618	979	830	65	595	563	115	235	1,532	3,708	3,462	75.3	75.0	1,217	579	408	368
Northern Pacific	May	6,883	11,929	607	13,671	15,504	2,899	2,645	246	2,833	2,715	468	320	5,235	11,963	12,008	87.5	77.5	1,708	1,236	1,022	1,748
	5 mos.	6,886	58,200	2,829	66,535	64,895	11,616	10,186	1,370	14,602	13,540	2,355	1,519	27,380	58,536	54,568	88.0	84.1	7,998	6,151	3,513	5,084
Northwestern Pacific	May	331	1,290	15	1,338	1,020	220	216	20	110	112	4	6	448	801	794	59.9	77.9	537	230	158	62
	5 mos.	331	4,927	42	5,128	4,483	1,359	1,139	95	516	498	20	27	1,992	3,976	3,782	77.5	84.4	1,153	452	125	50
Oklahoma City-Ada-Atoka	May	132	108	....	108	105	27	25	2	3	2	....	2	23	59	54	54.8	51.8	49	22	15	16
	5 mos.	132	501	....	505	489	119	106	12	25	22	....	10	111	285	264	56.5	54.0	220	99	65	62
Pennsylvania	May	10,120	66,615	12,932	83,471	89,577	12,780	11,791	1,309	21,254	22,528	2,788	1,336	37,628	76,421	76,735	86.4	85.7	12,050	5,764	5,496	4,388
	5 mos.	10,120	321,562	67,562	432,038	414,853	59,476	50,519	6,812	97,911	108,415	12,233	6,715	190,232	371,408	368,488	86.0	88.8	60,680	28,442	25,762	11,513
Pennsylvania-Reading Seashore Lines	May	364	630	156	816	898	204	200	27	90	99	15	10	534	878	944	107.6	105.1	—62	129	—314	—279
	5 mos.	354	3,045	627	3,816	3,735	1,064	1,132	127	461	468	77	52	2,687	4,439	4,624	116.3	123.8	—624	544	—1,759	—2,009

Table continued on next left-hand page

A brand new bridge in 7½ hours!





LARGE PHOTOGRAPH at top shows the new bridge on falsework alongside the old bridge. Falsework for the old bridge can be seen on the opposite side of the piers. Directly above is view of new bridge after removal of old bridge and all falsework.

NEW BRIDGE is in position on piers. Old bridge is on falsework.

CLEAR TRACK AHEAD! Job completed, the bridge is open for traffic.

The structure was designed by the Pennsylvania Railroad Company. Fabrication, erection and removal of the old span was by American Bridge.

AVAILABLE NOW! For showing in churches, schools, clubs and industries, the new sound and color motion picture—BUILDING FOR THE NATIONS—a candid, factual photographic record in full color of the highlights of the fabrication and erection of the United Nations Secretariat Building in New York City.

How novel use of the "double shift" speeded erection of Pennsy's new triple-span bridge over the Allegheny River

PENNSYLVANIA RAILROAD'S new double track bridge over the Allegheny River at Warren, Pa., is another example of American Bridge ingenuity. In this case, an old bridge was replaced by a modern structure on the existing piers with a minimum of traffic interruption.

The project involved the erection of three double-track, thru truss spans, each 154′6″ long and 33′ c.c. of trusses, on falsework adjacent to the existing piers, simultaneously rolling the old structure off these piers onto similar falsework, and the 2,200-ton steel superstructure with its ties, rails, timbers and pipe railing into position on the original piers.

The amazing "double shift" transposition was completed—all six spans simultaneously—rails connected, and the new bridge opened for trains after a traffic interruption of only 7½ hours!

Jobs like this, and the more recent one for the Illinois Central at Cairo, explain why so many railroads rely upon the know-how, the facilities, and the experience of American Bridge to handle the most difficult construction problems.

AMERICAN BRIDGE DIVISION, UNITED STATES STEEL COMPANY
GENERAL OFFICES: 525 WILLIAM PENN PLACE, PITTSBURGH, PA.

Contracting Offices in: AMBRIDGE · ATLANTA · BALTIMORE · BIRMINGHAM · BOSTON · CHICAGO CINCINNATI · CLEVELAND · DALLAS · DENVER · DETROIT · DULUTH · ELMIRA · GARY · MEMPHIS MINNEAPOLIS · NEW YORK · PHILADELPHIA · PITTSBURGH · PORTLAND, ORE. · ROANOKE ST. LOUIS · SAN FRANCISCO · TRENTON UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS TRADE MARK

AMERICAN BRIDGE

UNITED STATES STEEL

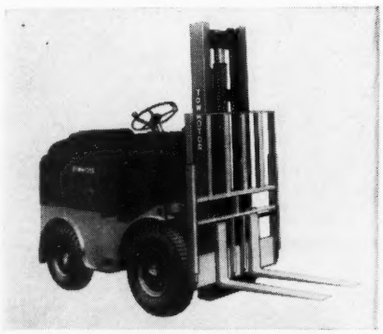
REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

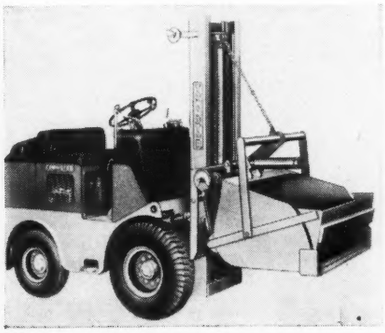
MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1952

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1952	Total (inc. misc.) 1951	Operating Expenses: Maint. Way and Structures: Total 1952	Total 1951	Deprec. and Retirements	Maint. Equipment: Total 1952	Total 1951	Deprec. and Retirements	Traffic	Transportation	Total 1952	Total 1951	Operating ratio 1952	Operating ratio 1951	Net from railway operation	Railway tax accruals	Net railway operating income 1952	Net railway operating income 1951
Pittsburg & Shawmut	May	97	176	....	176	206	31	30	9	47	40	9	4	48	140	132	79.4	64.0	36	5	59	73
	5 mos.	97	883	....	887	1,010	146	128	31	274	269	44	18	248	731	727	82.4	72.0	156	28	261	228
Pittsburgh & West Virginia	May	132	754	....	759	787	91	158	23	151	198	33	52	191	513	644	67.6	81.9	246	129	139	109
	5 mos.	132	3,689	....	3,725	3,605	561	659	116	926	850	167	260	959	2,838	2,887	76.2	80.1	887	526	583	571
Reading	May	1,321	9,442	605	10,691	11,070	1,470	1,763	178	2,387	2,366	397	151	4,152	8,529	8,958	79.8	80.9	2,162	1,232	1,153	1,043
	5 mos.	1,322	49,311	2,929	55,857	53,245	7,757	7,340	1,038	11,208	10,887	1,948	759	21,715	43,376	42,206	77.7	79.3	12,481	6,654	6,228	5,467
Richmond, Fredericksburg & Potomac	May	118	1,725	551	2,581	2,395	379	311	24	296	293	65	20	681	1,521	1,516	58.9	63.3	1,060	579	332	263
	5 mos.	118	8,169	3,179	12,966	11,622	1,621	1,344	118	1,496	1,389	325	102	3,714	7,692	7,279	59.3	62.6	5,274	2,902	1,720	1,557
Rutland	May	397	350	18	432	548	81	89	10	82	88	13	21	224	430	483	99.5	88.1	2	30	—44	9
	5 mos.	397	1,909	96	2,384	2,416	405	434	48	434	429	75	96	1,156	2,217	2,345	93.0	97.1	167	146	—66	—198
Sacramento Northern	May	271	183	....	188	315	60	71	5	17	19	4	2	78	166	198	88.0	63.0	22	15	—13	70
	5 mos.	271	1,072	....	1,102	1,377	303	295	22	68	91	20	11	405	833	887	75.5	64.4	270	73	102	306
St. Louis-San Francisco	May	4,601	8,951	561	10,350	10,074	1,606	1,699	167	1,736	1,658	484	289	3,882	8,010	8,066	77.4	80.1	2,340	758	1,612	920
	5 mos.	4,601	43,176	3,002	50,327	50,086	8,419	8,337	900	8,643	8,521	2,418	1,457	18,873	39,855	39,562	79.2	79.0	10,472	5,240	5,414	4,873
St. Louis, San Francisco & Texas	May	159	372	7	406	391	43	49	4	38	44	1	21	140	254	317	62.4	81.1	153	63	38	16
	5 mos.	159	1,985	34	2,160	1,978	235	236	19	181	183	5	100	765	1,345	1,341	62.2	67.8	816	241	318	148
St. Louis Southwestern Lines	May	1,569	5,757	38	6,043	6,068	764	957	48	640	752	95	167	1,603	3,361	4,070	55.6	67.1	2,682	1,373	1,078	712
	5 mos.	1,569	29,380	186	30,807	29,017	3,610	3,391	293	3,152	3,446	469	820	8,415	16,943	17,404	55.0	60.0	13,864	8,120	4,633	3,974
Seaboard Air Line	May	4,145	12,460	1,154	14,491	13,219	2,057	2,041	179	2,528	2,284	656	365	4,540	10,009	9,721	69.1	73.5	4,483	2,030	2,133	1,454
	5 mos.	4,145	59,977	7,690	73,111	66,256	11,118	11,166	863	12,097	11,087	2,724	1,844	23,353	51,291	49,097	70.2	74.1	21,820	9,873	10,084	7,207
Southern	May	6,306	19,144	1,831	22,663	22,570	2,764	3,019	225	4,342	4,373	756	428	7,220	15,661	16,539	69.1	73.3	7,002	3,886	2,752	2,350
	5 mos.	6,306	94,549	8,587	111,910	107,803	14,895	14,893	1,134	21,200	20,208	3,718	2,196	37,921	80,754	79,524	72.2	73.8	31,155	17,243	12,189	11,402
Alabama Great Southern	May	326	1,435	98	1,675	1,718	247	255	18	473	402	81	33	526	1,345	1,373	80.3	86.1	330	221	103	142
	5 mos.	326	7,060	463	8,222	8,040	1,181	1,153	90	1,936	1,944	405	170	2,665	6,275	6,442	76.3	80.1	1,948	1,287	658	668
Cinn., New Orleans & Texas Pacific	May	337	3,447	191	3,820	3,894	479	455	33	892	746	186	76	988	2,566	2,421	67.2	62.2	1,253	838	511	603
	5 mos.	337	16,605	1,133	18,786	18,429	2,288	2,247	163	4,203	3,848	872	354	5,092	12,616	12,019	67.2	65.2	6,170	4,167	2,439	2,701
Georgia Southern & Florida	May	397	647	70	779	715	175	165	12	68	71	10	8	208	475	479	61.0	67.0	304	111	62	58
	5 mos.	397	3,087	535	3,979	3,591	817	818	37	347	324	49	39	1,188	2,506	2,421	63.0	67.4	1,474	528	339	273
New Orleans & Northeastern	May	203	916	62	1,037	1,160	126	162	16	132	134	27	18	210	532	637	51.3	54.9	505	347	150	167
	5 mos.	203	4,275	287	4,889	5,463	767	824	73	621	607	137	97	1,204	2,918	3,025	59.7	55.4	1,971	1,357	583	785
Southern Pacific	May	8,118	38,191	4,306	46,002	44,403	4,969	4,926	500	9,141	8,881	1,528	840	17,182	34,134	33,670	74.2	75.8	11,867	5,316	5,435	3,414
	5 mos.	8,129	183,090	19,728	218,180	204,062	25,392	23,347	2,329	43,910	40,649	7,587	4,127	81,492	164,913	155,386	75.6	76.1	53,268	28,033	21,928	17,063
Texas & New Orleans	May	4,291	10,598	750	12,178	11,740	2,003	1,879	126	1,894	2,013	87	258	4,232	8,994	9,299	73.9	79.2	3,183	1,292	1,051	809
	5 mos.	4,291	54,550	3,657	62,368	57,784	9,341	9,279	621	9,024	9,060	439	1,298	21,413	43,880	44,096	70.4	76.3	18,487	8,547	5,552	4,486
Spokane International	May	152	232	1	245	267	43	54	3	21	20	8	5	86	165	150	67.2	56.2	80	16	50	56
	5 mos.	152	1,004	5	1,065	1,021	311	288	12	107	94	41	25	319	808	729	75.9	71.3	257	65	130	140
Spokane, Portland & Seattle	May	944	2,243	101	2,488	2,516	553	425	156	350	285	92	27	752	1,768	1,597	71.1	63.5	719	227	365	264
	5 mos.	934	11,040	446	12,221	11,413	2,050	1,864	337	1,595	1,444	452	137	3,870	8,096	7,473	66.2	65.5	4,125	1,482	2,220	2,275
Tennessee Central	May	286	416	1	439	423	84	92	5	68	74	20	11	135	320	343	72.8	81.0	119	25	62	30
	5 mos.	286	2,057	12	2,187	2,081	520	435	27	339	348	96	58	721	1,746	1,656	79.8	79.6	441	128	157	143
Texas & Northern	May	8	101	....	116	115	7	3	....	9	8	2	1	26	49	48	41.9	41.6	67	33	18	15
	5 mos.	8	474	....	527	549	31	40	....	44	48	12	5	113	217	267	41.2	48.7	310	155	94	101
Texas & Pacific	May	1,834	6,277	414	7,297	6,411	937	893	95	1,074	1,013	252	176	2,213	4,730	4,577	64.8	71.4	2,567	1,081	1,247	755
	5 mos.	1,834	29,296	1,949	34,012	31,391	4,790	4,288	581	5,556	4,740	1,260	896	10,705	23,565	21,857	69.3	69.6	10,447	4,690	4,282	3,514
Texas Mexican	May	162	311	....	327	293	72	72	8	38	33	8	8	68	205	209	62.7	71.4	122	56	42	27
	5 mos.	162	1,355	....	1,446	1,414	374	335	30	156	157	41	42	295	967	944	66.9	66.7	479	214	168	179
Toledo, Peoria & Western	May	239	582	....	593	548	107	113	6	52	48	9	43	121	360	382	60.8	69.7	232	107	83	39
	5 mos.	239	2,857	....	2,898	2,954	441	435	31	231	197	45	218	649	1,714	1,691	59.1	57.2	1,185	559	427	360
Union Pacific	May	9,843	32,020	3,461	38,851	42,458	7,071	6,973	455	7,393	7,844	1,168	1,005	13,897	31,497	32,506	81.1	76.6	7,354	4,985	1,136	2,007
	5 mos.	9,862	163,809	15,900	196,061	198,595	29,746	26,697	2,122	37,801	37,842	5,815	4,818	71,969	155,304	150,260	79.2	75.7	40,757	28,022	7,879	11,628
Utah	May	110	60	....	62	61	25	15	3	41	40	7	1	41	115	99	186.4	162.9	—53	10	—44	—32
	5 mos.	110	667	....	669	404	112	84	10	253	243	30	4	341	747	593	111.7	147.0	—78	56	—96	—195
Virginian	May	611	3,774	2	3,923	4,104	480	480	56	843	846	173	45	869	2,334	2,293	59.5	55.9	1,589	1,033	713	751
	5 mos.	611	19,607	9	20,391	18,500	2,518	2,033	290	4,631	3,884	860	231	4,708	12,560	10,609	61.6	57.3	7,830	4,528	3,918	3,654
Wabash	May	2,393	7,938	426	9,095	9,363	1,397	1,401	122	1,218	1,236	344	295	3,809	7,080	7,009	77.8	74.9	2,015	776	820	651
	5 mos.	2,393	41,227	2,036	46,816	46,974	6,128	5,882	558	6,330	6,052	1,691	1,437	19,312	34,988	34,074	74.7	72.5	11,828	5,103	4,639	4,367
Ann Arbor	May	294	767	....	775	775	105	96	17	123	111	30	27	301	574	570	74.1	73.6	200	97	91	66
	5 mos.	294	3,682	....	3,716	3,832	476	408	82	586	541	149	131	1,582	2,870	2,751	77.2	71.8	846	394	374	416
Western Maryland	May	836	3,920	9	4,119	3,750	530	565	43	896	750	173	82	1,248	2,946	2,737	71.5	73.0	1,173	732	699	630
	5 mos.	836	20,173	43	21,330	20,208	2,568	2,734	222	4,536	3,938	868	418	6,673	15,086	14,169	70.7	70.1	6,243	3,582	3,615	3,518
Western Pacific	May	1,193	3,840	320	4,274	4,626	735	729	66	638	672	119	181	1,231	3,023	3,356	70.7	72.6	1,251	555	646	78
	5 mos.	1,193	19,037	1,217	20,737	22,484	3,429	3,010	344	3,326	3,255	614	943	6,564	15,412	14,749	74.3	65.6	5,325	2,881	2,133	3,195
Wisconsin Central	May	1,046	2,328	41	2,505	2,773	432	465	36	448	449	66	70	1,001	2,055	2,140	82.0	77.1	450	136	207	267
	5 mos.	1,046	11,723	186	12,639	12,344	1,792	1,699	189	2,374	2,400	323	362	5,367	10,416	10,272	82.4	83.2	2,223	746	732	311

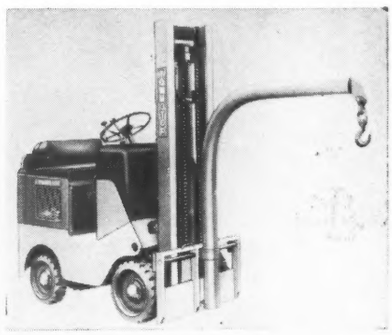
Three Towmotor Standard Accessories



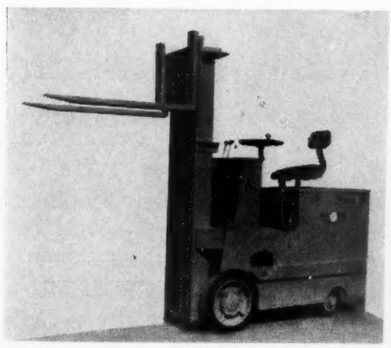
THE EXTENSION BACKREST.—For handling unusually high, multi-unit loads such as stacks of bags, bales or case goods. It is designed for use with any Towmotor model and is easily attached or removed by sliding in or out of the supporting sockets. Three heights are standard; intermediate heights are also available on special order, from Towmotor Corporation, Cleveland 10.



THE SCOOP.—For handling free-flowing or loose materials such as coal, ore foundry sand, cement, chemicals and many kinds of scrap. It will fit any Towmotor model and is designed to operate in close quarters. Shown here with the slice bar (optional) to prevent spillage, the scoop trips easily for gravity dumping. A pneumatic snubber reduces dumping shock.



THE CRANE ARM.—For handling heavy castings, dies, long bars and similar bulky materials and for placing loads in otherwise inaccessible spots. It is readily interchangeable with standard Towmotor forks. A drop-forged standard hoist hook is furnished with swivel suspension but, if desired, fixed suspension hooks or hooks of special size and shape can be furnished instead.



Wright-Hibbard Electric Fork Trucks

Improved models of its 2,000-, 3,000-, and 4,000-lb. capacity fork lift trucks have been announced by the Wright-Hibbard Industrial Electric Truck Company of Phelps, N. Y.

Travel speed of these trucks is approximately 5½ m.p.h. when under load. Four speeds both forward and reverse are possible. Operating controls prevent the driver going into high speed, in either direction, without first going through low. Lift speed is 41 ft. per min. light and 24 loaded.

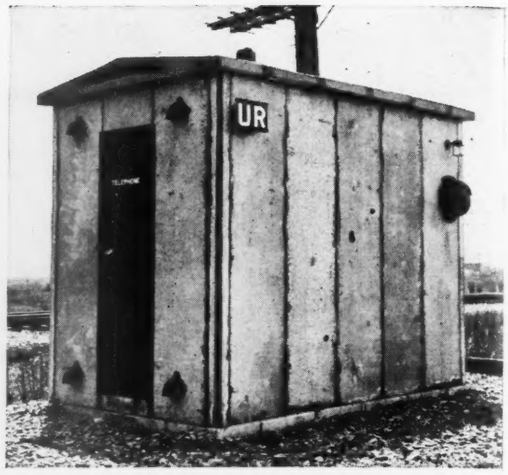
Forks lift 64 in. before the mast height of 83 in. is increased. This permits entering a door 7 ft. high.

The 2,000-lb. capacity model weighs 5,900 lb. with a 16-cell, 15-plate lead-acid battery and 5,700 lb. with a 24-cell, C-6 Edison alkaline battery.

Card-o-Matic Punch

A new machine for punching tabulating cards, known as the Card-o-Matic punch, has been produced by Remington Rand Inc., New York 10. Teamed with the same manufacturer's Conve-Filer, the user can gain almost completely automatic location of the proper master card in a motorized file, transfer, selection and punching of the desired information into a new tabulating card, and the opportunity to enter variable data as required, all from a single keyboard. A remote control sensing unit in the Card-o-Matic permits a synchronized operating control between the master card file and the punch. Thus in one operating sequence the operator is able to select the proper master tabulating card containing repetitive data, insert it in the sensing unit of the punch, select the desired information in the master card, add variable data, punch a new detail card and reinsert the master card in the original file location.

Signals and switch at point where t. c. s. permits use of single track.



Typical field station constructed of sectional reinforced concrete.

traffic control system... *dependably* wired with OKONITE

The Erie Railroad recently changed over more than 56 miles of conventional double track, near Buffalo, N. Y., to single track with a traffic control system. Virtually the entire system was wired with Okonite wires and cables.

Okonite wires and cables have been preferred for t. c. s. by major railroads since the earliest installations of traffic control systems. Here's why Okonite has proved most dependable for such jobs:

Double protection is afforded by highly stable Okolite insulation and its Okoprene sheath that resists moisture, heat, weather, oils, acids, and alkalis. Both are applied by Okonite's exclusive strip process, assuring uniform thickness, uniform vulcanization and a firm, permanent bond between both insulation and sheath.

Specify Okonite cables for t. c. s. . . . and for Diesel locomotive wiring, signal cables, shop wiring, car wiring, car retarders, switch machines, communications, and your other circuit requirements—you'll find it pays in the long run. The Okonite Company, Passaic, N. J.

The best cable is your best policy

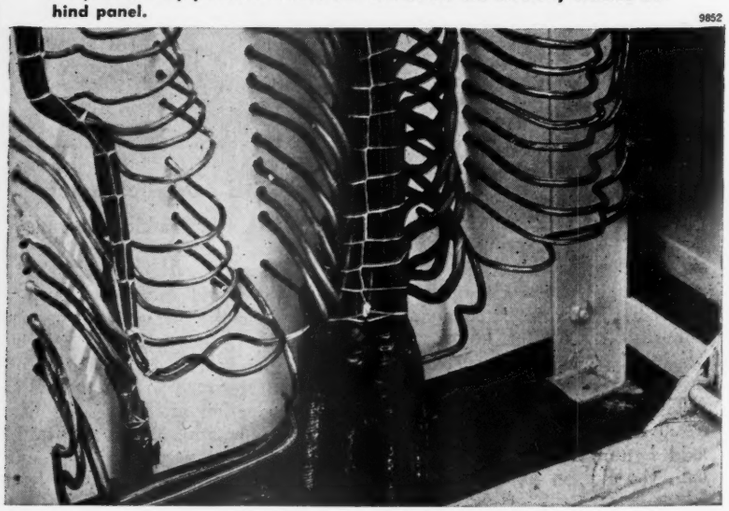
OKONITE

insulated wires and cables

Case wires insulated by Okonite strip process and protected right up to the terminal stud by the bonded Okoprene jacket.

Okonite underground cables enter through hole in floor filled with sealing compound. Fully protected individual conductors are carefully trained behind panel.

9852



RAILWAY AGE
EDITORIAL COMMENT

THE RAILROADS—A "PROBLEM" OR AN OPPORTUNITY?

There is some justifiable self-criticism going on among railroad men as to the way the industry's alleged "profits" are reported. Net railway operating income is a useful figure to people who know what it means, but is deceptive—on the high side—to those who don't. The whole idea of what constitutes "profit" needs a good going over by the railroads—especially to get rid of over-modest notions as to how much profit is "adequate."

"Profit Motive"—A Fiduciary Obligation

The duty of the management of any business is to operate it in such a way as to earn a profit for the owners and to protect the integrity of the investment. This is the much maligned "profit motive"—which has been interpreted as sordid, and far lower in the scale of moral values than, for instance, the zeal for public service, which is popularly reputed to supply the main motive power for effort in some of the professions. Actually, taking the long-run view, the quest by business management for profits and care in protecting the integrity of the investment is a fiduciary obligation, high in the hierarchy of ethical behavior.

If profits are not earned and the investment is dissipated in whole or in part, investors are unjustly deprived of their savings; employees' livelihood is jeopardized; service to patrons deteriorates; and the national patrimony of useful property is frittered away. The avoidance of these evils is a service to society which is fully as necessary and as honorable as instructing the young, healing the sick, incarcerating criminals, publishing newspapers, singing in the opera, or exhorting to righteousness from the pulpit.

Instead of being even slightly apologetic about their primary duty to protect property and earn profits, managements should be proud of their zealous performance of it—but careful not to overstate their accomplishments. There can be false profits in business—and often are. A great manufacturing concern could, for instance, considerably increase its reported profits by firing its patent lawyers and its research staff and skimping on maintenance.

In such cases, what would look on the books like an expansion in profits would really be a payment out of capital.

One of the greatest management problems of a mature business is adapting the business to changes in environment. Expenditures for research, development, public relations, employee relations and other such high-caliber and expensive "staff work" are a necessary mechanism for keeping an industry successfully adapted to its environment and, thus, for protecting the integrity of its investment. A relatively new business which is beset with the problem of catching up to the demand for its product does not have to put in much conscious effort toward adaptation to change. But in a mature business—one which has attained the zenith in its relative magnitude to all industry—effort and skill in adaptation to change is probably the price of survival, or of profitable survival in any event.

The constantly declining ratio of railroad traffic to total traffic does not indicate that the railroad industry has, as yet, had much success in adapting itself to the changes which have occurred in the industry's environment. Who could doubt that the exertion of greater effort and determination in this direction should receive top priority? Who can doubt, either, that putting forth an adequate effort in this direction will cost more money than the effort so far exerted—which has been proved to be inadequate by the meager results achieved?

As one chief railway executive has expressed it: "The railway industry needs to raise its sights." He was re-

ferring particularly to the industry's notion of what would constitute a "fair return"; but preserving the integrity of the investment should be included, also, in the sight-raising. That is, the railroads need, not only an average return of at least double the rate they have been earning—but, also, *they need to earn this higher return after having spent a lot more than they have spent yet to strengthen their hold on all the traffic for which the railroads possess an "inherent advantage."*

Two Primary Goals . . .

Another railway executive officer recently summarized his view of the railroads' primary goals, in substance, as follows:

(1) As quickly as possible, get the railroads out of all irremediably "red ink" operations—that is, all types of service where the railroads' "inherent advantages" are no longer superior; and

(2) Strive vigorously and unremittingly for governmental relations to transportation which will enable the railroads to retain or attract all the traffic where their "inherent advantages" are still superior—so that the industry may reliably, once more, look forward to growth in its business corresponding to the growth in the country's production and population.

As primary goals, these two are certainly a good start. They immediately suggest a number of auxiliary objectives—things which have to be done in order to attain (1) and (2). Among such auxiliary goals, certainly, the very first would be: Getting railroad men better equipped than most of them are now to discuss persuasively, in terms of the selfish interests of their hearers, the changes in regulatory and statutory provisions which are necessary to accomplish (1) and (2).

And Some Others

But aren't there some other primary goals besides the two that have been mentioned? The division of traffic in accordance with maximum economy—which is the substance of goals (1) and (2)—while vitally important as an objective, isn't any more so, for example, than (3) attainment in railroad service of the maximum degree of dependability (including maximum safety for passengers and minimum loss and damage), together with reasonable speed in transit.

The more nearly objective (3) is attained, the more traffic the railroads would be likely to get—even without 100 per cent success in attaining goals (1) and (2). Furthermore, success with goal (3) should help the atmosphere in governmental relations and thus assist in promoting goals (1) and (2). The attainment of (3) also carries with it the necessity for some auxiliary effort—for example, in continual improvement in operating methods and materials; and the correction of such deficiencies as the "hot-box problem," with generally higher performance standards for both the fixed property and rolling stock.

Then there is certainly at least one other objective that should be classed as primary, viz., (4) constantly improving the economy of railway service, so that movement by rail increases rather than diminishes in "inherent advantages." Striving for this objective entails constant alertness in the discovery and adaptation to railroad use of new developments throughout the whole range of technology and personnel practices, as well as study of ratemaking and merchandising devices and other means (e.g., consolidation) for maximizing utilization of facilities and attaining the economies of mass production.

A railroad man who has a talent for persuasive expression has said that he'd like to hear less about the "railroad problem" and more about the "railroads' opportunity." He is quite right, too. The problems confronted by railway management today fully equal in magnitude those which challenged the pioneer railroad builders.

And opportunity for management lies wholly in problems—the tougher they are the greater the opportunity. If there weren't any problems, the properties could operate without any management except that which routine clerical activities could provide.

LET'S SAVE THOSE OLD PHOTOS

This paper often has cause to seek photographs of railroading taken during the first quarter of this century. Believe it or not, they are as hard to come by as pictures of the Civil War era.

Photographs of the earliest years of the railroad industry are treasured and kept—but they didn't get treated that way, probably, till nine-tenths of them had disappeared. It's lucky some were saved, though. A classic example is the photograph of the golden spike ceremony of 1869. Perhaps the most widely reproduced industrial photograph of all time, it serves a dramatic function in keeping the public "railroad minded."

But the first quarter of our own century has now become history too. Steps need to be taken now to preserve a railroad picture history of that period. The trouble is that pictures since 1900 rarely look historic—they merely appear to be out of date. They are apt to wind up in the wastebasket to make room for the fresh crop of pictures of diesel shops, streamliners or push-button classification yards. Already it has become difficult, on some roads, to locate pictures of "standard" passenger trains of the twenties, of steam switching locomotives, and other sights now disappearing from the railroad scene.

That old lounge car picture—the one where all the women look like Clara Bow—that went into the wastebasket last week, might some day become a significant vignette of railroad history—ranking perhaps with the treasured Brady shot of "Old Number One."

The C.T.C. begins at FY, at the new north end of the Florence yard.

Trains Run in Either Direction on Both Tracks

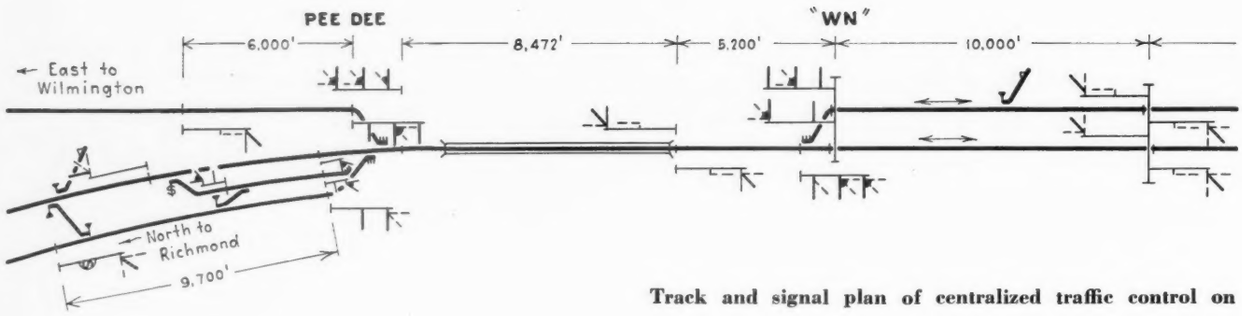
With new ACL installation of C.T.C.

To increase track capacity and improve flexibility of train operations, the Atlantic Coast Line has installed centralized traffic control on 2.5 miles of single track and 10 miles of double track between Florence, S. C., and Pee Dee. Florence is 298 miles south of Richmond, Va., on the double-track main line to Jacksonville. From Florence, a secondary main line extends west to Augusta, Ga., where a connection is made with the affiliated Georgia to Atlanta.

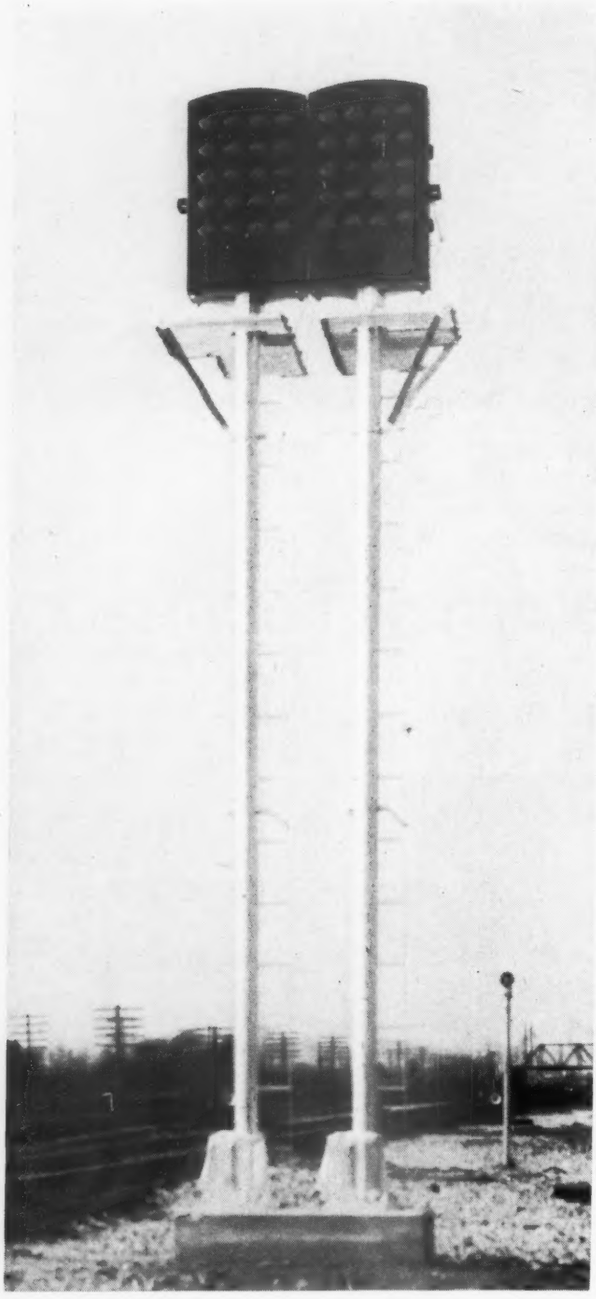
Florence is a division point, and has a large yard. From the passenger station, at the south end of this yard, double track extends north 10 miles to "WN" (see diagram), beyond which there is single track 2.5 miles on a trestle and a bridge over the Pee Dee river to Pee Dee. From Pee Dee, the double-track main line extends north toward Richmond, and a single-track main line extends east to Wilmington, N. C.

Previous to the installation of C.T.C., a 16-lever electropneumatic interlocking machine at Pee Dee controlled three switches and five signals, as well as the

Southbound passenger train passing northward home signals at the Mars Bluff crossover.



Track and signal plan of centralized traffic control on



Yark track indicator keeps freight trains moving.

remote control of the end-of-double-track switch and three signals at "WN" near Mile Post 283. Also, there was a 16-lever electromechanical interlocking machine at "FY," at the north end of the old Florence yard. This machine controlled five switches, two derails and eight signals. All signals were of the semaphore type. The old signaling through this territory was arranged for right-hand running only on the double track.

At the time C.T.C. was installed, the Florence freight yard was modernized and extended northward. This required moving the "FY" interlocking so as to control the north end of the new yard. Also, a new double crossover layout was required at Mars Bluff, approximately midway between "FY" and "WN," to provide the desired flexibility of operation. The new C.T.C. system, with the control machine in the yard office at Florence, now controls the power switches and signals at "FY," Mars Bluff, "WN," and Pee Dee, and the signals at the north end of the Pee Dee siding. The signals function for train operation in either direction on both main tracks.

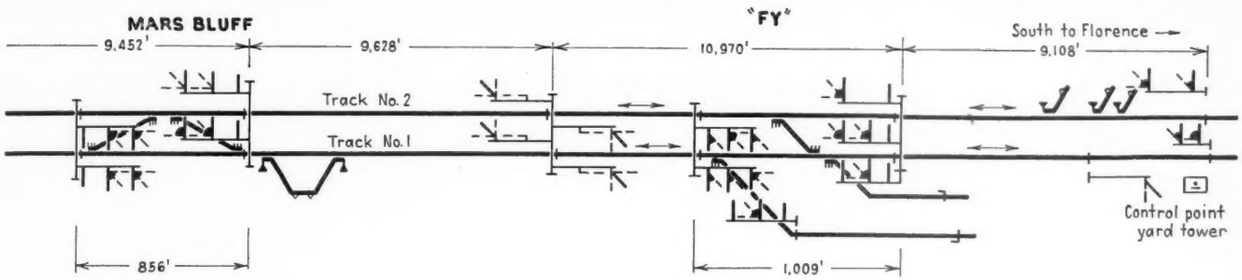
Keeps Trains Moving

Between Florence yard and Pee Dee there are scheduled daily 20 passenger trains and about 20 to 24 freight trains, totaling 40 to 44 or more trains daily. Six of these trains go to or come from the Wilmington line.

Previously when passenger trains were due, southbound freight trains would be delayed at Pee Dee, or northbound trains, ready to depart from the yard at Florence, would be delayed. Now, with the entire area controlled from one machine, train movements are coordinated. The additional controlled crossovers at Mars Bluff, and the either-direction signaling on both main tracks, are used to advantage.

For example, a southbound freight train can be run from Pee Dee to Florence yard on track No. 2 while a southbound passenger train is run around it on track No. 1 between Pee Dee and Florence. Also, if a northbound freight is ready to leave the yard, it may be run out on track No. 2 as far as Mars Bluff, or to "WN," while, in the meantime, a passenger train of either direction can be routed over the other track. This flexibility has proved an important aid in preventing train delays, and in getting trains out of the yard with a minimum of delay.

A new one-story brick and concrete tower was constructed at the yard office to house the new five-foot Style "C" C.T.C. control machine, other C.T.C. equipment and batteries. This tower, designated "WG," is on the west side of and at about the midway point of yard. The panel of the control machine has 9 levers for the



the Atlantic Coast Line between Pee Dee, S.C., and Florence.

control of 12 switches and crossovers, 11 levers for control of 22 searchlight signals, and 3 push-to-turn levers for control of 5 electric locks on hand-throw switches.

Yard Track Indicators

All southbound freight trains enter Florence yard at the north end. A part of the yardmaster's job is to be sure that a yard track is clear for each approaching train to enter. Previously, when approaching the yard, each southbound freight would stop to allow the head brakeman to telephone to the yardmaster to find out what yard track was available. This caused considerable delay. Therefore, as part of the new yard project, a lamp-type yard track indicator was installed at the north end of the yard.

This indicator has two panels, each with four vertical rows of five lamps each. The display of a track number in the indicator is controlled by the yardmaster, the controls being transmitted from the yardmaster's office to the indicator location—a distance of 6,600 ft.—on two two-wire line circuits, using code control system.

The panels for controlling the yard track indicator are mounted on a small table at the left of the yardmaster's desk. Each of the two panels at the top has ten telephone-type keys which the yardmaster operates to send out line codes to the yard track indicator. When the train arrives and enters the yard, the display of the track number of the indicator is canceled by sending out a cancel code.

This C.T.C. project was planned and installed by ACL forces, under the direction of J. S. Webb, chief engineer communication and signaling; the principal items of signaling equipment and the yard track indicator equipment were furnished by the Union Switch & Signal Division of the Westinghouse Air Brake Company.

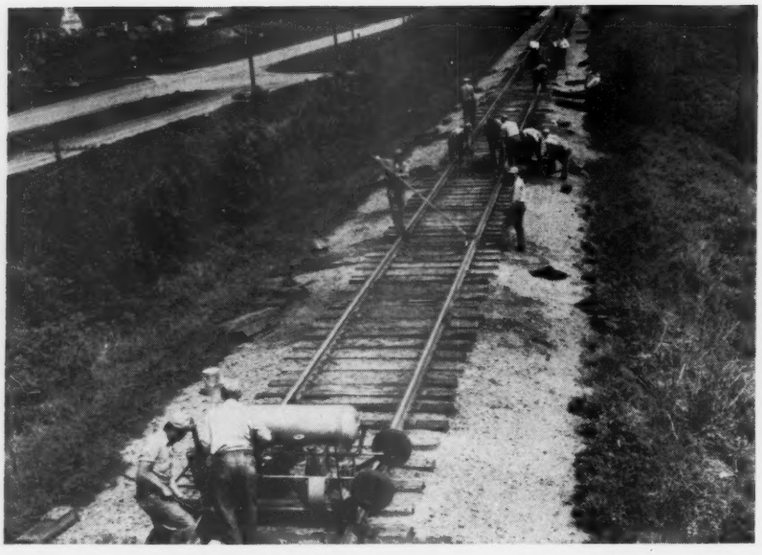
BENCH MARKS AND YARDSTICKS—20

Speaking to the American Society of Civil Engineers in Denver last month, Executive Vice-President A. E. Perlman of the D&RGW reminded his hearers of the country's material progress, for which engineers deserve a large share of the credit, but challenged them with the practically "uncharted wilderness of human relations" which confronts us. He suggested that engineers ought to bring to this "raw frontier the same fine services" they have rendered to the nation's material advancement.

The scientific revolution the engineers have brought about, he went on to say, has brought on a social revolution, where the former personal relationship between employer and employee no longer occurs automatically; and where the workmen who join to produce something frequently have no idea of what the end product is and how what they do contributes to that product. The result is pretty nearly chaos, and progress toward order in this realm comes slow and hard—if, indeed, it is occurring at all.

He concluded that "our frontiers in human understanding must be given the same intelligent effort that men of science have given to research in physics, chemistry and mathematics." Praising the pioneering efforts of the scientists who are studying the wonders of the human mind, he said that their present experiments may seem clumsy and amateurish but, nevertheless, they are moving in the right direction and have already achieved results that would have got them burned as witches, if they'd lived three centuries ago. "Let's learn more of human relations, even at the expense of geodesy or steretomy. Then we as engineers can learn to work with people, as well as with mathematics and materials."

Hardly anything needs adding to such a statement as that—as one of the "bench marks" for an engineer to use to check himself to see how he is doing. His schooling has taught him the hows, whys and wherefores of moving inanimate matter and controlling quantitative forces, but he can't push people around with a bulldozer, or turn them down in a lathe, or assay their value by a simple chemical or electrical test. The technically trained man who has become aware of the difference between the handling of people and of quantitative forces has already established a valuable bench mark for himself. When he adds to his equipment a little rudimentary scientific knowledge—and few there are who possess any more—about people, he than has his sights trained on something fundamental. Real progress begins from that point.



Although ties renewed are widely separated and are being applied in cemented gravel ballast, the 20-man district maintenance gang on the Great Northern is renewing ties more efficiently than ever before.

After the spikes and the rail anchors engaging the ties to be renewed have been removed, ballast is pried away from the

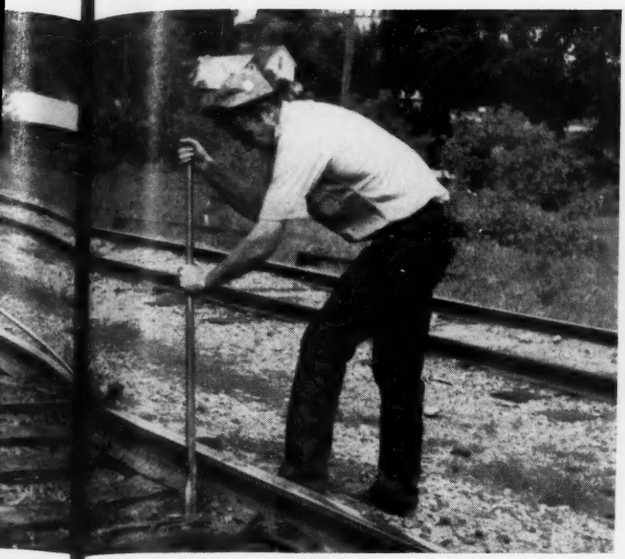
Here the hydraulic cylinder of the tie-end remover has been lowered into the open tie bed, and the ends of the cut tie are being pushed outward with their tie plates. Behind this machine, new ties are inserted and tamped.

Since the new ties are tamped up to the base of the rails, a rail-lifting device is used to raise the rails just high enough to

How the GN Mechanizes Tie Renewals

Special tools and machines, light enough to be quickly removed from the track, effect substantial economies

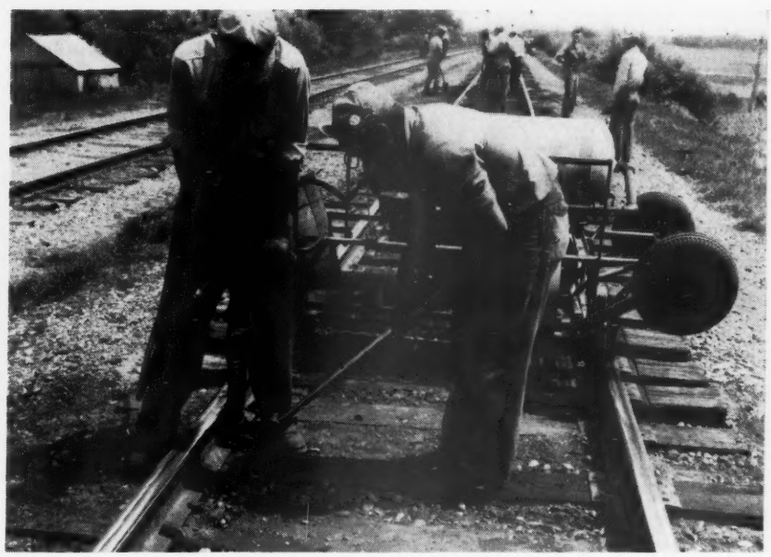
To expedite tie-renewal work the Great Northern is experimenting with a 20-man district maintenance gang equipped with some special tools and newly developed machines. In the past, the district maintenance gangs on this road have each been equipped with two mechanical tie cutters when making tie renewals, and have averaged 10 ties per man-day. With the aid of the new and additional machines with which the experimental gang is equipped, the average renewal rate has been increased to 12 ties per man-day.



sides of the ties where the cuts are to be made, the purpose being to prevent damage to the saws of the tie cutters.

When the two tie cutters have completed sawing a tie, the tie center is lifted from the roadbed. The tie is sawed into three pieces, the two cuts being made near the inside ends of the tie plates.

permit the tie plates to be inserted. Insertion of tie plates is the sixth of nine steps in the mechanized tie renewal process.



The newly developed spiking machine then drives the spikes in the new ties. Behind this operation, the rail anchors are reapplied and the pieces of the old ties are loaded and hauled away.

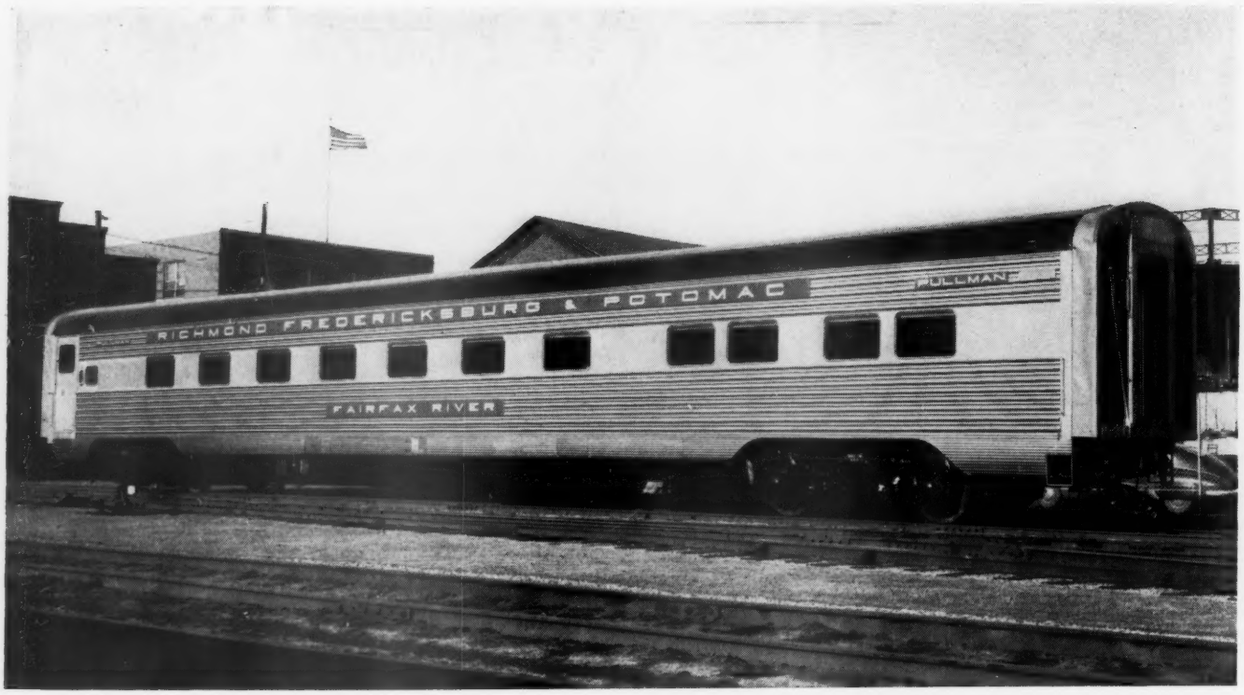
The equipment furnished to this gang consists of two tie cutters, a tie-end remover, a spiking machine, a push car, and various small tools. The tie cutters have been used for many years for cutting ties adjacent to the tie plates inside of each rail. The tie-end remover is a companion unit for the tie cutter. After the center section of the cut tie has been lifted out, the remover is used to push the two tie ends outward.

The spiking machine, a new development, is a manually propelled machine which carries a pneumatic spike hammer and an air compressor driven by a gasoline engine. In addition to the conventional small hand tools, such as claw bars, picks, tie tongs, and mauls, this gang is also supplied with two special tools, namely, a spoon bar and a rail-lifting device.

The general sequence of the operations involved when renewing ties with the experimental gang is as follows: (1) Remove spikes from the ties marked for renewal and remove rail anchors engaging those ties; (2) using a pick and the special spoon bar, remove ballast from the sides of ties where they are to be sawed; (3) cut the ties near the inside ends of the tie plates, using the two tie-cutting machines, working in tandem; (4) remove the cut ties, using the tie-end remover; (5) insert and tamp the new ties; (6) insert the tie plates with the aid of the rail lifting device; (7) drive the spikes in the new ties, using the new spiking outfit; (8) reapply the rail anchors and adjust any other anchors requiring attention; and (9) load and remove the cut pieces of the old ties.

Last year, this same gang, using only two tie cutters, renewed ties at an average cost, including labor, interest on the equipment, fuel, etc., of $1.05 per tie. This year, working with the two additional machines, this gang has renewed ties at a cost of $0.93 per tie.

A more detailed description of the equipment and organization of this gang appears in the July *Railway Engineering and Maintenance.*



"Railroad managements . . . have invested since 1947, $1 billion or more annually for capital expenditures"—including new cars like this 14-roomette, two-drawing-room sleeper built by the American Car & Foundry Co.

Will Laws—and Taxes—Counteract Operating Economies?

Are the large financial savings in railroad operations resulting from investment in scientific innovations and inventions "to be rendered worthless by ill-considered taxation and imprudent Keynesian legislation?"

Evidence that that question is a source of concern to financial analysts—the men whose opinions often influence investment in railroad securities and, hence, the state of railroad credit—is found in an article in a recent issue of the Analysts Journal. In it, Pierre R. Bretey, past president of the National Federation of Financial Analysts' Societies, reviews the story of the railroads' postwar improvement program, with special emphasis on the reduction in operating costs achieved through investment in modern technical developments.

"As a result of the industry's traffic and financial showing during the war," Mr. Bretey says, "investor confidence at its termination in 1945 was almost entirely restored. Then, once again, forces beyond the control of railroad managements operated against the industry adversely. . . .

"In addition to being subject to higher costs, with subsequent deterioration of competitive position, untoward results to the industry were compounded by failure of the regulatory bodies to adjust freight rates promptly as an offset to such rising costs. There accordingly ensued a phenomenon common to all regulated industries, an inevitable 'squeeze' in profits, which scarcely provided an atmosphere conducive to reestablishing railroad credit to its former high estate.

"Confronted with postwar realities, when Class I earnings, despite the depreciation of the dollar, averaged only $537 million (1946-50), compared with $746 million for the period 1922-29, and $678 million for the war period 1941-45, railroad managements had one of two choices: (1) attempting to influence public opinion to the end that subsidies granted to competing transportation media be either eliminated or greatly reduced: or, (2) financing a large-scale rehabilitation program to improve operating efficiency. A precedent for this latter had been established in the twenties. . . .

"Fearing their inability to alter the existing unfavorable political climate, wherein the public was apathetic to the railroads' plea for abolishing subsidies, railroad managements turned to tried and tested precedents, and have invested, since 1947, $1 billion or more annually for capital expenditures, drawing in part on their accumulated cash funds for this purpose. Such a policy has been conducive to large operating savings over the years, and particularly in the past several years."

The article then reviewed in some detail the general types of capital expenditures which the railroads have made since the war, with emphasis on those involving new or improved technical developments—dieselization: centralized traffic control and other signaling devices.

But "much remains to be done . . . It has been estimated that, to effect complete modernization of Class I railroads, some $15 billion of capital expenditures are still required."

"However important the savings from capital investments have been, and are likely to be, and however necessary for the railroad industry to keep abreast of technological developments to provide improved service to the public," the railroad problem cannot be solved "solely through large scale expenditures for additions and betterments."

such as automatic crossing gates and radio communication; mechanization of l.c.l. handling, of track maintenance and of office procedures; and new cars, such as "DF" box cars and mechanical refrigerator cars. Terminal improvements and line relocations were also mentioned as sources of important savings for some railroads, and specific savings were listed where figures were available. This led to the conclusion that:

$15 Billion to Go

"Much remains to be done in these and in other fields to reduce costs further. It has been estimated by competent authorities that, to effect complete modernization of Class I railroads, some $15 billion of capital expenditures are still required: $4 billion for new diesel or gas-turbine locomotives, the latter type now in its development stage; $2 billion for replacement of 20,000 antiquated passenger cars; $4 billion for replacement of 700,000 obsolete freight cars with those of larger tonnages, equipped with new easy riding trucks; and $5 billion for improvement of grades and of roadbeds, for modernizing classification yards, for complete mechanization of all track work and freighthouses in l.c.l. operations, and for extension of modern signal devices, including additional centralized traffic control and radio.

"This represents an even greater rehabilitation job than that effected by the carriers both in the 1920's and since V-J day. Presentday technologies point to the need of spending at least $10 billion of the necessary $15 billion in the current decade. . . . Still more funds will be needed in each succeeding decade until such time, if ever it should occur, as the railroads follow the canal and the horse down the path of economic obsolescence."

But, the article concluded, "however important the savings from capital investments have been, and are likely to be, and however necessary for the railroad industry to keep abreast of technological developments to provide improved service to the public," the railroad problem cannot be solved "solely through large-scale expenditures for additions and betterments."

"The railroads are regulated just as though they still enjoyed a transportation monopoly. If the United States persists, as it has since the mid-thirties, in adhering to the economic tenets of Keynes, with emphasis upon full employment and consequent inflationary implications, the position of the railroads, under conditions of strict regulation, would indeed be untenable. . . .

"An [other] essential requirement for a healthier competitive situation is a change in the taxing philosophy on the part of governmental authorities. . . . In the past decade or more, railroads have become fair game for the tax collector. As a consequence, taxes are absorbing an ever-increasing percentage of railroads' earnings. Even the brotherhoods cannot be absolved from criticism in this development, since they employ their economic power to force the railroads to contribute ever larger percentages of their gross revenues for unemployment and pension benefits. The roads average higher social betterment funds than any other major industry in the United States.

"In some instances, taxes have advanced beyond the point of diminishing returns, as witness the now defunct New York, Westchester & Boston. The demise of this commutation railroad resulted from the failure of the communities it served to reduce taxes adequately. . . .

"Scientific innovations and the progress emanating from inventions make possible large savings in railroad operations. Are they to be rendered worthless by ill-considered taxation and imprudent Keynesian legislation?"

American Airlines' reservations office at LaGuardia Airport, said to be the largest of its kind in the world, employs 304 agents and supervisors, on a round-the-clock basis, to handle more than 9,500 calls a day. Against the rear wall is a board, listing flights for a full week, which will be supplanted by the Magnetronic Reservisor.

This Electronic Device Simplifies Reservation Handling

An electronic "brain," said to be the first of its kind in commercial use, has been put into service by American Airlines in New York to handle space reservations. The "Magnetronic Reservisor" is designed to keep accurate and up-to-the-moment information on seats available and to reduce to a matter of seconds the time needed to make a passenger's reservation.

Developed jointly by American Airlines and the Teleregister Corporation, at a cost of about $500,000, the machine represents eight years of research. It is said to be the first application of the electronic digital computer principle to a commercial inventory problem.

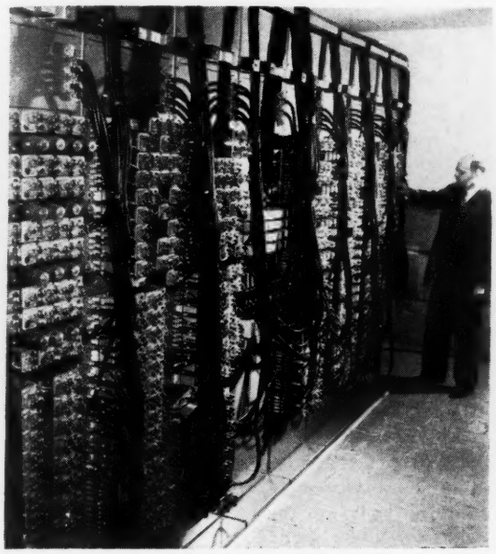
By simple manipulation of keys on an "agent set," resembling a small adding machine, a ticket or reservations agent can in a matter of seconds determine space available and make or cancel reservations. This eliminates time-consuming telephone calls between ticket offices and the reservations office. It also eliminates the complicated availability board in the reservations office on which the seat inventory was previously kept. Reservation agents, receiving telephone calls from ticket agents or passengers, previously consulted this board to determine space available. The inventory was kept by means of 2,407 separate unit plaques manually posted on the board. The Magnetronic Reservisor puts the entire inventory at the fingertips of both the reservations agents and the ticket agents. Ticket agents no longer need to telephone the reservations office to determine space or to make or cancel reservations. It is all done by push-button electronics.

The brain, housed in a specially air-conditioned room in American's hangar at LaGuardia Airport, New York, consists of a battery of electronic tubes which do the necessary computing, and a "memory" in which is stored the inventory of seats. The memory consists of two magnetized drums which whirl at 1,200 r.p.m. A running inventory of space on more than 1,000 American Airlines flights for a period of ten days is recorded on the surface of the drums in the form of tiny areas of magnetized material. (About 89 per cent of reservations are made ten days or less in advance.)

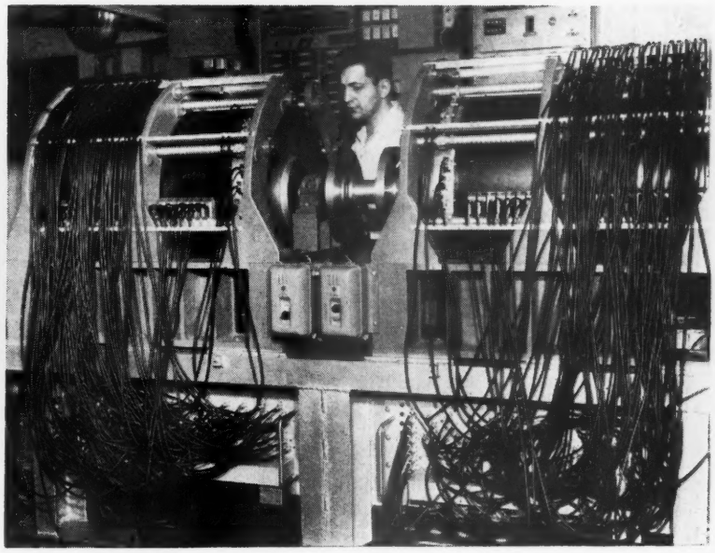
The agent sets have access to the brain through direct cable from the reservations office in a nearby room and through leased lines from remote ticket offices throughout the metropolitan area.

As an example of how the Reservisor works, assume that a passenger has requested three reservations for a flight from New York to Chicago:

1. The agent selects a destination plate from a file at his elbow. This plate is notched, much as a house key.
2. He inserts the plate in a slot behind eight lucite push-button lamps on the agent set. This sets up the connection with specific areas of the memory drum containing data on the proper flights. The sections of the plate above the eight lucite keys have printed data on flight number, departure time, etc., for each of eight flights.
3. The agent then pushes buttons designating the date and number of seats requested, and activates the "availability" key.
4. In as little as three-fourths of a second the Reservisor responds, lighting the lucite lamps corresponding to those flights which have at least three seats available.
5. The passenger makes his choice of flight, the agent depresses the lighted lucite key for that flight and flips a key to "sell."
6. In as little as one-fourth of a second, a green light on the agent set indicates that the machine has com-

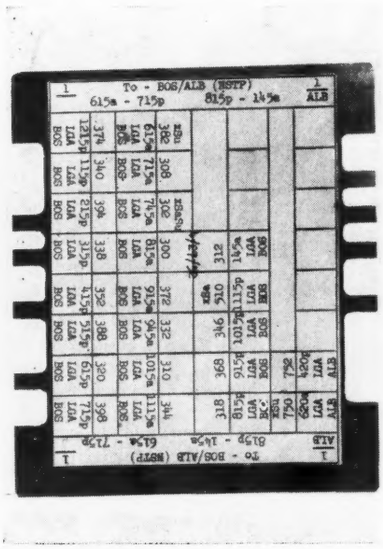


THE "BRAIN" OR COMPUTER "reads" incoming request from an agent's set and routes it to the proper section of the "memory."



THE "MEMORY" maintains the 10-day flight inventory in the form of magnetized spots on the surface of the Reservisor's rotating storage drums, which turn at 1,200 r.p.m.

AN AGENT'S SET—used by reservations or ticket agents to determine almost instantaneously whether space is available on a flight and to sell or cancel space. Date keys are at left. Lucite keys show space available.



THE DESTINATION PLATE — a coded plate giving the number, departure time, origin and destination of flights, and other information. Used in the agent's set to select a specific group of flights.

A MASTER AGENT'S SET is available to supervisors to read the inventory of seats in the storage drum of the Magnetronic Reservisor and to alter the inventory for cancellations or other reasons.

pleted the transaction, subtracting three seats from the inventory for that flight on the drum.

If the passenger wants his three seats on one specific flight, the agent can skip the availability check. In that case, he inserts the destination plate, sets the date and number of seats and flips the "sell" key. If seats are available, the green light indicates that the reservation has been made. If the flight has been sold out, however, the machine rejects the reservations with an amber light.

A representative of Teleregister told a *Railway Age* reporter that already the manufacturer was working on a method to hook in ticket sales with the reservation system.

Although designed for the air line's specific problem, the Magnetronic Reservisor can be applied to any business in which rapid access to a large inventory or record is necessary and in which changes in the inventory need to be made quickly, accurately and reliably.

American Airlines handles in New York on the average 9,500 telephone calls daily from the public concerning reservations. Operators taking these calls use the Reservisor in the same way as a ticket agent, employing a similar "agent's set."

So long as space is available in the inventory for a given flight, cancellations can be added to the inventory by depressing the proper key on the "agent's set." Supervisors have available a more elaborate "master set" which also enables them to ascertain the exact inventory available at any time, or to make adjustments in the inventory record as conditions dictate.

Can Diesels Be Grouped for Tonnage Rating?

In a study of different makes and models by E. H. Weston, units are classified in two groups of like characteristics for loading calculations over lines of similar grades

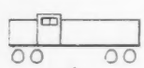
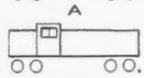
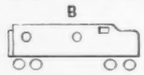
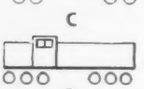
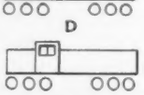
Because there are many makes and models of diesel-electric locomotives possessing different characteristics, confusion arises when it comes to the selection of a locomotive of a suitable type for a particular service. From this premise E. H. Weston, assistant chief mechanical engineer of the Chicago & North Western, in a paper before the semiannual meeting of the American Society of Mechanical Engineers at Cincinnati June 15 to 19, after a study of the characteristics of a number of models develops the possibility of grouping locomotives in categories for preliminary tonnage rating. This technique greatly simplifies the establishment of preliminary ratings.

In his paper Mr. Weston calls attention to the extent of the changes in current designs of electrical equipment, the purpose of which, he says, is mainly twofold—to provide more horsepower per driving axle to increase train speeds, and to provide additional amperage capacity of electrical equipment to increase hauling capacity of the locomotives. A further factor making for diversification is the increasing number of special low-axle-loading machines suitable for light rail and light track structures which, Mr. Weston says, are the result of the approaching saturation of main-line requirements for diesel motive power. The six-axle six-motor type of 1,600-hp. road-switcher, with a total weight around 290,000 lb., is the outstanding example of a current type of branch-line locomotive.

These same six-axle, six-motor road-switchers are also being ballasted to 360,000 lb. for heavy main-line drag service at low speed. In other cases, two or three 1,000-hp. switching locomotives with special gear ratios are being multipled for special types of heavy line drag service.

The impact of all of these types of diesels on the railroads has resulted in no little confusion as to just which type is suitable for a specific service. Since railroad purchases of diesel power have for the most part been made slowly at first and then more rapidly, each railroad may have a number of different models of the same general type of locomotive from the same manufacturer. To add to the complexity of the situation, the operating people are given to understand that certain of these locomotives of the same horsepower cannot operate together in multiple on the same train because of differences in electrical equipment.

TABLE 1—CHARACTERISTICS OF THE THREE FOUR-MOTOR AND TWO SIX-MOTOR DIESEL-ELECTRIC UNITS

1	2	3	4	5	6	7
Loco. type	Wt. on drivers, lb.	Start. tr. force 25 per cent adh., lb.	Start. tr. force acts at max. speed, m.p.h.	Elec. tr. force-adh., m.p.h.	Cont. speed, m.p.h.	Cont. tr. force, lb.
 A	250,000	62,000	5	8½	10½	42,500
 B	255,000	63,750	5	9	11	40,000
 C	233,000	58,250	5	10	11	40,000
 D	278,900	69,700	5	9	7½	59,000*
 E	287,000	71,750	5	8	7¼	61,500*

*Limited by adhesion.

Relationships Confused

Mr. Weston asserts, too, that on many railroads there still is not a clear conception of the relationship of maintenance and operating expenses of diesel motive power as against the gross ton-miles per freight train-hour produced. The result is that on any given railroad the polyglot population of diesel locomotives are constantly being shifted from division to division in an effort to secure better utilization. If system timetables must patiently spell out tonnage ratings for every type of diesel by number for every subdivision the timetables will soon attain undue proportions and complexities.

The problem of tonnage-rating all the various types and makes of diesels for all subdivisions is formidable. Some means must be found to rate these machines quickly and safely with special emphasis on added train costs arising from stalling and doubling hills or simply overloading and damaging the electrical equipment.

In some cases tonnage ratings can be superseded by special agreements stating the duties a certain road job must encompass. Here switching moves and time on the road are the ruling considerations. Most train movements, however, are based simply on the principle of getting the greatest possible movement of tonnage per motive-power unit.

General Traction Characteristics

Railway mechanical and electrical engineers can help in simplifying the tonnage rating situation, Mr. Weston declares. Ways and means exist by which certain common denominators of performance can be developed for all types and makes of diesel locomotives. When a tonnage rating for a diesel is under consideration, it is only natural, he says, to think of engine speeds near or at the continuous rating speeds of the traction motors. If the ruling grade is not too long, it may be that the tonnage rating is associated with a pulling force and speed slightly below continuous rating. In such a case engine weight on the drivers and limit of rail adhesion may be the common tractive force limiting factor rather than electrical overloading.

These facts Mr. Weston emphasized by a diagram

TABLE 2—TIME AND DISTANCE TO ACCELERATE TO CONTINUOUS SPEED WITH RATED TONNAGE

1	2	3	4	5	6	7
					Accel. from rest to cont. speed	
Loco. type	Cont. speed, m.p.h.	Cont. tr. force, lb.	Train resis.* .77 per cent grade, cont. sp'd, lb. per ton	Cont. speed train on .77 per cent grade, tons	Time, sec.	Distance, ft.
A	10½	42,500	19.40	2,190	48	420
B	11	40,000	19.40	2,060	44	385
C	11	40,000	19.40	2,060	48	416
D	7½	59,000†	19.20	3,070	40	221
E	7¼	61,500†	19.25	3,200	39	208

* 50-to cars.
†Limited by adhesion.

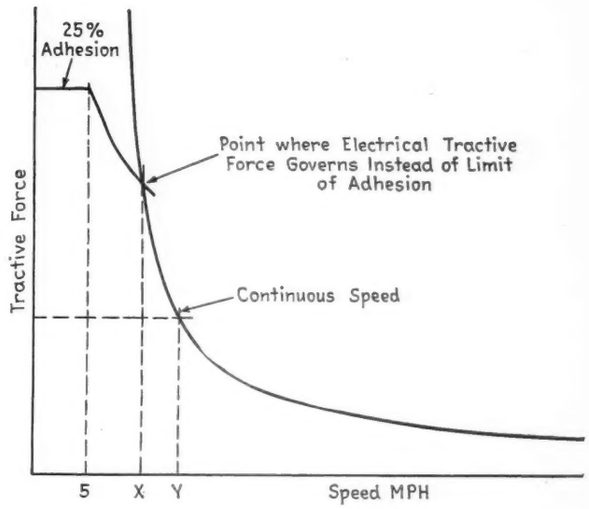


Fig. 1—The relation between rail adhesion and electrical tractive force below the continuous speed.

(Fig. 1) which indicates, first, the typical hyperbolic trace of a tractive force-speed curve of a diesel-electric locomotive, and second, the depressing effect of rail adhesion on the tractive force curve in the speed ranges below continuous speed.

The starting tractive force of the locomotive in Fig. 1 is assumed to be limited by a factor of adhesion of .25, or 25 per cent of the weight on driving wheels. This starting tractive force is further assumed to remain constant until a speed of 5 m.p.h. is approached. As the speed of the locomotive increases beyond 5 m.p.h., there is a very rapid deterioration in the factor of adhesion. The factor of adhesion drops as the speed of the locomotive increases, but beyond about 10 m.p.h. the rate of decline begins to moderate.

Generally in the vicinity of 8 to 10 m.p.h., the tractive force line representing the limit of rail adhesion of the locomotive drivers crosses the hyperbolic curve of electrical tractive force. The point of intersection of the curve representing the limiting value of rail adhesion and the curve of the electrical pulling force of the traction motors is indicated on Fig. 1 by the second vertical dotted line from the ordinate which intersects the abscissa at "X" miles per hour.

Thus, "X" m.p.h. in the case shown is the point where the electrical tractive force of the locomotive's motors limits the pulling effort of the machine instead of the limit of rail adhesion. At speeds greater than "X" m.p.h., the effective tractive force of the locomotive is truly represented by the typical tractive-force curve published by the manufacturer.

Tractive Force 25 Per Cent

In Table 1 are illustrated five types of diesel-electric locomotives with the weight on drivers varying from 233,000 to 287,000 lb. Locomotives A, B and C are of the four-axle, four-motor type, D and E are six-axle, six-motor type. The starting tractive force of each is limited to 25 per cent of the respective weights on the drivers and varies from 58,250 to 71,750 lb.

Column 4 indicates the maximum speed up to which the starting tractive forces act. Column 5 indicates the speeds at which the tractive force limited by adhesion equals the electrical tractive force of the traction motors. These speeds in Column 5 correspond to speed "X" miles per hour in Fig. 1. Column 6 states the continuous rated speed of each unit, and Column 7 states the tractive force associated with each continuous speed.

In lines D and E and in Column 5 the balance point of tractive force limited by rail adhesion and tractive force limited by the power of the traction motors occurs at a speed greater than the continuous speeds for the two locomotives as stated in Column 6. This is typical of most six-axle, six-motor machines weighing about 285,000 lb. on the drivers. For locomotives D and E in Table 1, the limit of adhesion fixes the maximum pulling force for all speeds up to and through the continuous rating speed; the machines designated D and E will slip down on a grade before they will overload the traction motors.

Resistance Based on Weight and Speed

Table 2 restates the designations of the five types of locomotives with columns 1, 2 and 3 carried over from Table 1. Here Column 4 indicates the basis on which the loading of the five types of machines being compared is estimated. The resistances in pounds per ton of car weight are based on a car weight of 50 tons gross load moving at the respective continuous speeds of each locomotive and traveling up a .77 per cent grade. The .77 per cent grade figure was selected because it was the best average ruling grade condition of all C&NW divisions radiating out of Chicago.

In Column 5 is shown the result of dividing the continuous tractive forces for each type of machine by the respective train resistances. The total train tonnages shown in Column 5 represent train consists that each locomotive could be expected to start from rest on flat and level track and to handle over various divisions around Chicago.

Columns 6 and 7 state the calculated elapsed time and distance needed by each of the five selected locomotives to arrive at their respective continuous speeds on flat and level track when handling the tonnage indicated in Column 5.

From Columns 6 and 7 in Table 2, it is evident that

TABLE 3—THE CRITERION UNIT IS DETERMINED BY AVERAGING THE TIMES AND DISTANCES OF ALL UNITS IN EACH GROUP

Loco. type	Cont. speed, m.p.h.	Cont. speed train on .77 per cent grade, tons	Accel. from rest to cont. speed: Time, sec.	Accel. from rest to cont. speed: Distance, ft.	
A	10½	2,190	48	420	Group 1 units
B	11	2,060	44	385	
C	11	2,060	48	416	
	Average		46	407	
D	7½	3,070	40	221	Group II units
E*	7¼	3,200	39	208	
	Average		39.5	214	

*Criterion unit.

locomotives A, B and C perform quite differently in handling their respective trains than do D and E.

Selecting Criterion Unit

Forgetting, for a moment, the specific train tonnages shown for each locomotive in Column 5 and just remembering that each of the five types of locomotives *is loaded in the same degree*, it is evident, says Mr. Weston, that for speeds from zero to continuous, certain of the machines in Table 2 will group as far as train performance is concerned. In setting up the grouping on the basis of diesel performance figures as set forth in Columns 6 and 7, it is recommended that only those locomotives whose acceleration times and distances from rest can be contained within a range of 10 per cent from minimum to maximum be used as the basis.

Table 3 is a partial restatement of Table 2, but goes one step further in showing averages of train performance data for each of the two groups of locomotives. In the case of locomotives A, B and C, designated as Group I units, the averages of the three values of acceleration times and distances indicate that B is the criterion unit of the group.

In the case of D and E the averages of accelerating times and distances would not positively indicate which machine might be representative of that group. In this case the criterion unit might simply be selected on the basis of the number of each type owned by the railroad.

The method outlined in Tables 2 and 3 for grouping various types of diesel units is an attempt to average out locomotive performance facts in the speed ranges where tonnage ratings are generally determined. Mr. Weston states, however, that if a tonnage rating subsequently developed for the criterion engine in any group so selected and grouped on any ruling grade is applied to each of the other engines in the group, the resulting data on time over the hill and time running at continuous speed or below will not vary among any of the engines in the group by more than 12 per cent.

It is also a fact, says Mr. Weston, that using the criterion unit's tonnage rating for a group of locomotives will result in train performance statistics at speeds above continuous rating that will be almost identical for all

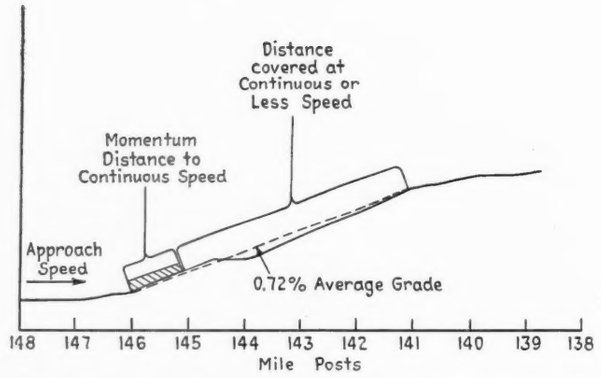

Distance covered at Continuous or Less Speed
Momentum Distance to Continuous Speed
Approach Speed
0.72% Average Grade
148 147 146 145 144 143 142 141 140 139 138
Mile Posts

Fig. 2—The grade selected for determining the tonnage rating of the criterion units.

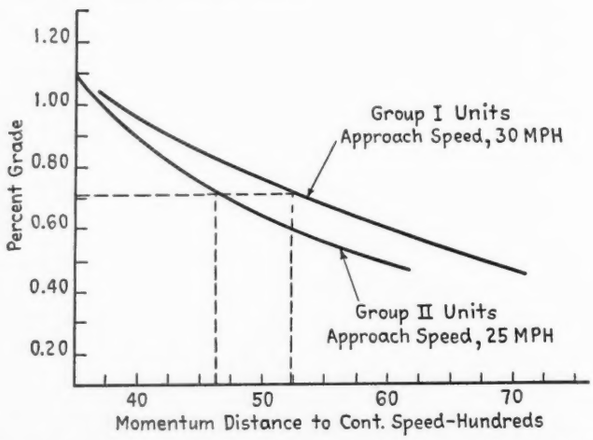


Fig. 3—Curve for determining the distance during which the train slows from approach speed to continuous speed.

machines in the group. In other words, to use the tonnage rating for a certain division as developed from a given criterion unit picked from a group of locomotives analyzed will result in almost identical values of gross ton-miles per freight train-hour for all machines in the group.

Performance on Ruling Grades

After determining which one of a group of locomotives is to be the criterion machine of the group, it will, of course, be advisable to consider a certain ruling grade and develop a group tonnage rating for the grade. Fig. 2 indicates a typical grade over which tonnage ratings for each criterion units may be developed. The average grade is .72 per cent and it is approximately five miles, or 25,000 feet long.

TABLE 4—HOW THE TOTAL TONNAGE AND ALLOWABLE CONTINUOUS GRADE AT CONTINUOUS SPEED ARE COMPUTED

Line No.		Group I units	Group II units
1.	Length of initial average grade, ft.	25,000	25,000
2.	Momentum distance on .72 per cent grade Fig. 3, ft.	5,200	4,600
3.	Net length of grade at continuous or less speed, ft.	19,000	20,400
4.	From Fig. 4, minimum locomotive speed, m.p.h.....	8.8	6.8
5.	From Fig. 5 and Line 4: maximum tractive force, lb.	50,000	63,500
6.	Train resistance* per .72 per cent grade: speeds per Line 4, lb. per ton	18.30	18.20
7.	Maximum tonnage rating, Line 5 ÷ Line 6, tons	2,730	3,490
8.	Net trailing tons (Line 7 minus engine weight), tons	2,603	3,347
9.	Practical limit of trailing tons (90 per cent of Line 8) tons	2,340	3,010
10.	Continuous grade at continuous speed, per cent ...	.61	.78

*Based on 50-ton cars.

Each criterion unit and train will approach the grade from the left at a certain speed. As the locomotive and train start up the hill, the momentum of the train will assist the locomotive in overcoming the initial effects of the grade for a short distance. Since the combination of grade resistance and speed resistance of the freight train cars is generally greater than the locomotive tractive force at speeds above continuous, the train speed decreases steadily as the train moves up the grade until eventually it slows down to the continuous rating speed of the traction motors. The distance the locomotive and train run up the grade while at the same time slowing down from the approach speed to continuous speed is shown as a bracketed line labeled "momentum distance to continuous speed."

The remaining distance of the grade beyond this first bracketed length is that part of the grade that the locomotive and train will negotiate at the continuous speed of the locomotive or less, depending on the tonnage and on the steepness of the grade.

Fig. 3 suggests how the "momentum distance to continuous speed," might be quickly found. For each criterion engine in Group I or Group II, a number of calculations were made, working backwards from certain train tonnages and given ruling grades to develop the data for each graphed line shown.

Fig. 3 is based on an approach speed of 30 m.p.h. for the Group I machines and 25 m.p.h. for the Group II machines. Outside of considerations for special slow orders or signals at the foot of certain grades that would require a train coming to a full stop, the approach speeds and resulting distances to slow to continuous speed for the various per cent of grades shown, are representative of average road conditions, Mr. Weston believes.

The Speed of Each Unit

Fig. 2 shows that the average value of the ruling grade under consideration was .72 per cent. Looking up the ordinate axis of Fig. 3 to .72 per cent and reading across to each of the group lines, it develops that Group I machines with their trains will slow from 30 m.p.h. to 11 m.p.h. on a .72 per cent grade in 5,200 feet, whereas Group II locomotives and trains will slow from 25 m.p.h. to 7¼ m.p.h. on the same .72 per cent grade in 4,600 feet.

Fig. 4 is a graph of the short-time ratings of the traction motors for the criterion engines in Group I and Group II. The data in Fig. 4 are generally supplied by the manufacturer in tabular form, but were put into the form shown by simply reading distance into the manufacturer's declaration of speed and allowable time in the overload zone. The closer the speed of the locomotive approaches its continuous speed, the greater the distance the locomotive will be permitted to run at that speed.

Going back to the problem in hand, from a consideration of the grade on Fig. 2 and the "momentum distance to continuous speed" found in Fig. 3, Mr. Weston develops that Group I locomotives will negotiate 19,800 ft., and Group II 20,400 ft., of the grade at continuous speed or less. Reading up to the short time rating curve on Fig. 4 for each criterion engine, he finds that Group I units cannot travel slower than 8.8 m.p.h. and that Group II units cannot travel slower than 6.8 m.p.h. in traversing this grade.

Having determined the minimum operating speed for each criterion unit for negotiating the ruling grade without exceeding the short-time ratings of the traction motors, Mr. Weston considers the maximum pulling force each criterion unit will develop at these speeds.

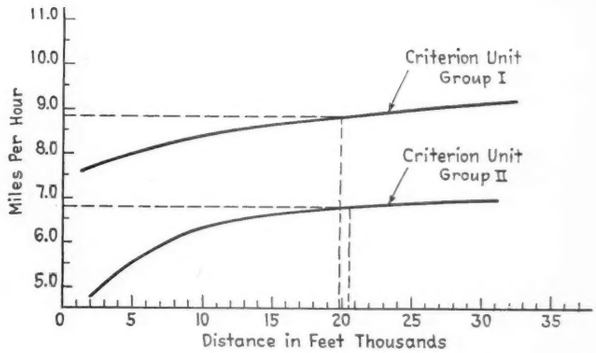


Fig. 4—Short-time traction motor ratings, showing the distances that can be covered safely at each speed.

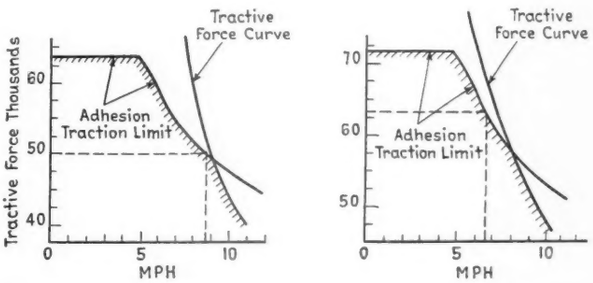


Fig. 5—Detailed low-speed portions of the tractive force curves for the two criterion units.

Fig. 5 details the low-speed portion of the tractive-force curves of the two criterion units. Superimposed on these tractive force curves are the respective limits of pulling force due to rail adhesion for each criterion unit.

The minimum speed of 8.8 m.p.h. on the ruling grade as calculated above is indicated and a vertical line is erected to the tractive force curve. For the case of the Group I machines the pulling force is 50,000 lb. and is limited by rail adhesion.

When the minimum-speed point of 6.8 m.p.h. for Group II machines is found on the tractive-force curve, a pulling force of 63,500 lb. results, limited again by rail adhesion.

From tables of car resistance at the minimum speeds for each of the criterion units plus the equivalent resistance of grade, a total figure of train resistance is found. Dividing the total train resistance figure for each group of units into the respective maximum pulling forces gives the total train tonnage that can be moved over the grade without exceeding the short-time ratings of the motors or exceeding the limits of rail adhesion.

Determining Rated Tonnage

Using Table 4, Mr. Weston outlines how the above calculations and graph readings might be handled to arrive at the total train tonnage. Line 7 indicates the total train tonnage for each group of machines. Line 9 suggests that 90 per cent of the maximum train tonnage figured above be used for the published tonnage rating. The 10 per cent cut from the calculated maximum tonnage allows for uneven track conditions that might further depreciate the rail adhesion factors; for the effect of wind on a broken-consist train; for a possible

"Ways and means exist by which certain common denominators of performance can be developed for all types and makes of diesel locomotives."

high proportion of empty cars to loaded cars, thus increasing temporarily the specific train resistance per ton of weight; and finally for the fact that the mechanical and electrical condition of locomotives is not always up to standard.

Line 9, then, indicates the practical limit of train tonnage that may safely be handled by all Group I and Group II locomotives.

Line 10 develops an interesting point. If each criterion engine were loaded down with the train tonnage outlined in Line 8 and then run at full power at its continuous speed, it would be able to negotiate a certain grade for an indefinite time. The per cent of grade over which this indefinite period of operation would result is indicated in Line 10.

Grade Condition Easily Judged

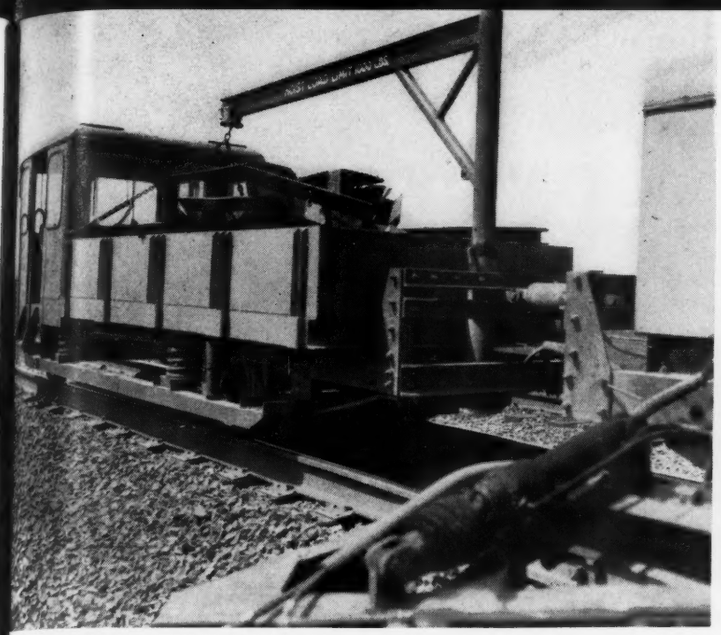
A re-examination of the track profile for the division over which the above tonnage rating was determined might then be made to see just where and by what amount any other grade on the division might exceed this continuous-speed grade. A check can thus be made on the original selection of the ruling grade for the division. Perhaps another spot will turn up where the criterion machine will go into its short-time rating. But with a set of critical distances and speeds already worked out for a given train tonnage, the new grade condition can be quickly judged as to importance.

Aside from the advantage of being able to examine quickly the effect of various grades on a division on a large group of locomotives, other questions can be answered with equal ease, Mr. Weston points out. For instance, the shorter the ruling grade over which a tonnage rating calculation is carried, degree of grade being equal, the heavier the locomotive may be loaded. In other words, the effect of train momentum is relatively more important in rating a locomotive on a short grade because the remaining distance the locomotive must run to clear the crest of the hill is much shorter and hence the locomotive can safely dip more deeply into the short time rating of its traction motors. From the particular grade condition in hand, plus a consideration of Figs. 3 and 4, allowance may be made for the shorter grade with a lesser full-load locomotive speed assigned, thus giving a higher short-time tractive force.

From the practical standpoint the indicated method of grouping diesel locomotives, where formal tonnage tests do not exist, can assist in arriving at general agreements with the operating people while at the same time allowing the machines to be worked to a safe maximum.

Further, a system of grouping diesel-electric locomotives on an equal performance basis simplifies the selection of engines to be multiplied together. A method of grouping diesel units into tonnage-rating groups regardless of manufacturer, model, weight on drivers, or continuous speed, is valuable in selecting those that might evenly share train load when working together.

Finally, if it occasionally becomes necessary to mix diesel units of two different groups together on a train, a system of grouping would immediately indicate that the lowest group rating machine should lead the train and that the train tonnage should be only multiples of the rating of the lowest unit.



Fairmont's W 80 Series "A" tool car is a towed companion unit for the ballast-maintenance car and carries all of the necessary tool attachments in the gondola section for use on the rear working arms of the latter car. The boom of the crane can swing through 360 deg. so that any attachment can be lifted from the gondola section by the hoist.

At the rear of the tool car is a cab having four adjustable swivel seats for a pilot train crew. It is enclosed with safety glass and contains a valve for service applications of brakes on both the tool car and the ballast-maintenance car. It is also equipped with an air-actuated horn, train markers and lights, and back-up headlights.

Tool Car Adds Flexibility to Drainage Unit

Attachments for IC ballast-maintenance car are carried by an auxiliary unit with crane hoist to facilitate changing on job

Coupled together, the Model W 77 Fairmont ballast-maintenance car and the tool car form a versatile unit that can perform many ballast-conditioning operations.

An important feature of the Fairmont ballast-maintenance car is its ability to perform several ballast-conditioning operations with the aid of interchangeable tool attachments applied to the working arms of the machine. But, with a power plant and the hydraulic mechanisms that operate the working arms occupying the major portion of the chassis of this machine, and with the operator's cab filled with control panels, a machine operator and his assistants, as well as by a pilot train crew, there was little room available for transporting on the car those attachments that were not being used at a given time. Under such conditions, the tools not mounted on the working arms of the machine had to be transported by other means to the location where the ballast-maintenance car was scheduled to work, and hence were not always available when needed.

With the objective of increasing the efficiency and effectiveness of a late-model ballast-maintenance car in use on the Illinois Central, this road is now operating this car in conjunction with an auxiliary tool car which incorporates a crane. This latter car not only has a gondola section for carrying the necessary tools and attachments, but also has a hoist to handle the heavier tools to and from the working arms on the ballast-maintenance car. In addition, the auxiliary car has cab accommodations for a three-man pilot train crew, thus eliminating the congestion formerly prevailing in the operator's compartment of the ballast-maintenance car.

If it is desired to loosen ballast on the track shoulders the disks can be mounted on the rear working arms of the ballast-maintenance car. When the ballast has dried out sufficiently, the disks can be removed and the crane hoists used to swing the bladers into position for bolting them to the working arms. The car can then be used for pulling the shoulder ballast up against the ends of the ties. Equalizing boxes are also carried on the gondola section of the tool car and these can be quickly mounted for equalizing and shaping the shoulder ballast. The scarifiers are mounted on the front working arms of the ballast-maintenance car so that they can be in operation at the same time that other attachments are being used on the rear working arms of the machine.

A more complete description of the auxiliary tool car appears in the July *Railway Engineering and Maintenance.*

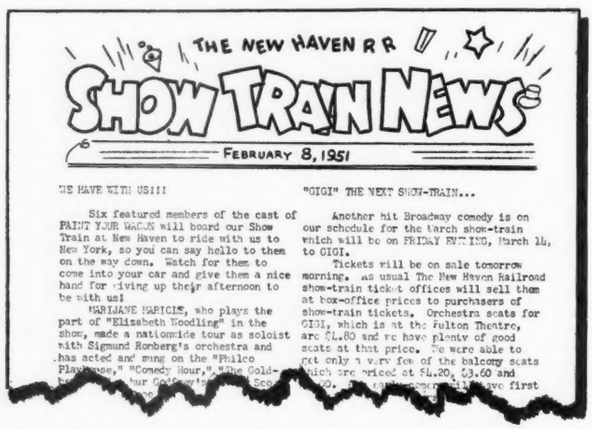
The children came in for a share of the fun when the New Haven ran a "Junior Show Train" into New York to see Gene Autry. Here the youngsters admire one of the members of the cast on board the train.

"Show Trains" Produce a Profit For the New Haven

Twenty-nine "Broadway Show Trains" operated over a two-year period have produced an average gross revenue per special train-mile of $8.58 and a substantial net profit for the New Haven, after all direct expenses. Special "Broadway Show Trains" are operated from Springfield, Mass., and Hartford, Conn., to New York and return—a maximum distance of 134.3 miles one way. The revenue per special train-mile has varied from a low of $3.34 to a high of $18.07. In addition to producing a substantial direct operating profit, these trains have been responsible for inestimable good will and publicity for the railroad.

These show trains are operated into New York in connection with specific plays or musical shows. Theater tickets are sold by the railroad at selected local ticket offices together with special low-cost railroad tickets good only on the "Broadway Show Trains." The railroad's sole revenue is from the sale of railroad tickets; it receives no commission or other compensation from the Broadway producer for handling theater tickets. The "Show Trains" are usually operated one Friday night a month from October through June. Tickets are on sale generally at Springfield, Hartford, New Britain, Meriden, New Haven and Bridgeport, as well as a few other intermediate points—all large communities sufficiently removed from New York to make regular theater attendance a little difficult without the benefit of specially scheduled train service.

Fast schedules are set up for these "show trains." They reach Grand Central Terminal, New York—a few blocks



THE NEW HAVEN R R

SHOW TRAIN NEWS

FEBRUARY 8, 1951

WE HAVE WITH US!!!

Six featured members of the cast of PAINT YOUR WAGON will board our Show Train at New Haven to ride with us to New York, so you can say hello to them on the way down. Watch for them to come into your car and give them a nice hand for giving up their afternoon to be with us!

MARIJANE MARCIL, who plays the part of "Elizabeth Woodling" in the show, made a nationwide tour as soloist with Sigmund Rosberg's orchestra and has acted and sung on the "Philco Playhouse," "Comedy Hour," "The Gold-

"GIGI" THE NEXT SHOW-TRAIN...

Another hit Broadway comedy is on our schedule for the March show-train which will be on FRIDAY EVENING, March 16, to GIGI.

Tickets will be on sale tomorrow morning. As usual The New Haven Railroad show-train ticket offices will sell them at box-office prices to purchasers of show-train tickets. Orchestra seats for GIGI, which is at the Fulton Theatre, are $4.80 and we have plenty of good seats at that price. We were able to get only a very few of the balcony seats which are priced at $4.20, $3.60 and

A mimeographed newspaper is produced by the traffic department and distributed to all passengers on the train.

A member of the cast from "I Know My Love" wearing her stage bridal costume.

A number of manufacturers have taken advantage of the New Haven's "Broadway Show Trains" to distribute product samples.

from the theater district—at 6:45 p.m., about 1¾ hours before curtain time. The return trip is scheduled to leave Grand Central about 45 minutes after the final curtain. The New Haven's finest stainless steel coaches are used, and a recreation-grill car is operated in both directions.

A "party atmosphere" is lent to the trip—both going and returning—by strolling musicians on the train. Top members of the cast of the play of the evening are invited to ride the trains and mingle with the passengers. More recently different manufacturers have been invited—and some have requested permission—to give souvenir products to all passengers. To date, complimentary cigarettes, newspapers, corsages, magazines, cigarette holders and candy have been distributed.

Selection of the plays and musicals which might be used for future "show trains" is made by the general passenger agent in New York and the publicity representative, working together. Their suggestions and recommendations—which necessarily must be limited to theaters willing to furnish sufficiently large blocks of tickets for railroad sale—are reviewed at a passenger traffic department staff meeting, and the final selection made. Selections are made three months in advance so that there will be ample time for proper preparation.

Railroad tickets are sold at special low fares, built on a base rate of approximately 2.5 cents a mile, rounded off so that the point-to-point fares, including tax, will end in zero or five.

The theater tickets are received on consignment about 30 days in advance of the show date. Blocks of 800 or more tickets are obtained, depending upon theater capacity and traffic department estimates of probable sales. These tickets are invoiced by the passenger traffic department to each of the local ticket offices handling show train tickets, with a copy of the invoice for the auditor. All unsold theater tickets are returned to the theater, together with remittance for tickets sold, three to five days before the performance date.

The railroad requires that a railroad ticket be purchased with every theater ticket sold through its ticket offices. Commuters holding regular New York commutation tickets from show train stations are permitted to purchase theater tickets, but this practice is not encouraged.

So well known are these theater trains that little advertising is necessary. "Flyers" are distributed about three weeks in advance at all stations where the tickets will be offered. Post card announcements are mailed to a list of 3,000 show train patrons one month in advance. Newspaper advertising is rarely used, though, occasionally, the theater involved will undertake some advertising on its own. "Spot" radio announcements are used to introduce the newest Show Train.

The original show train was operated on March 1, 1949, for the play "Silver Whistle," as a joint project by the New York Theatre Guild and the New Haven. Its instantaneous success led to successive endeavors which have all been successful, though in varying degrees.

At first New York theaters were hesitant about cooperating, on the grounds that these "Broadway Show Trains" were "too speculative." Their continued success, however, has pretty much quelled this fear. Now the theaters are generally most anxious to cooperate.

During the past two years special trains have been operated for such popular shows as "South Pacific," "Call Me Madam," "The King and I," "Mr. Roberts," "Two on the Aisle," and "Guys and Dolls."

Serving Other Cities

Several times a year some pre-Broadway premieres of plays and musical comedies come to New Haven for "trial runs" to test audience reaction. These trials have presented opportunities for the railroad to run show trains from Springfield and Hartford to New Haven. In general, this operation is about the same as that to New York—except that the trains are timed to avoid conflict with the New York trains.

It is the New Haven's experience that not all shows—even including some very good shows—have sufficient mass drawing power to make the operation of "Broadway Show Trains" economically feasible. In the course of its experience, the New Haven has learned to "feel out" those shows that will sell well in its show train territory and those that won't.

In computing costs for these trains, the New Haven includes all direct train expenses—including the salaries and traveling expenses of the passenger representatives who accompany the trains.

SUPPLY TRADE

(Continued from page 18)

Company's Norfolk, Va., branch. Mr. Horne, who formerly was manager at Memphis, Tenn., joined Graybar in 1933. **W. J. Berry** succeeds Mr. Horne at Memphis.

Joseph H. Young has been appointed assistant to the chairman of **Poor & Co.** Born in Salt Lake City in 1864, Mr. Young has been associated with 22 different railroads, nine of which he served as president. In 1927

Joseph H. Young

Mr. Young was named assistant to the president of the Westinghouse Air Brake Company and the Union Switch & Signal Co., in which capacity he served until his retirement on December 13, 1951.

C. J. Plisky has been appointed vice-president in charge of production of the **Pressed Steel Car Company.** Before his new appointment, Mr. Plisky was vice-president in charge of the

C. J. Plisky

firm's Unicel and Jahn Trailer divisions. He joined the company in 1941 as a foreman in the machine shop of the armored tank division at the Hegewisch (Chicago), Ill., plant, becoming plant manager in 1947.

OBITUARY

William Luther Lewis, 68, president of the Chicago Pneumatic Tool Company, died on June 28. A native of Wales, Mr. Lewis was brought to this country as a boy. He was elected vice-president, secretary and treasurer of Chicago Pneumatic Tool in 1930 and president in 1946.

FINANCIAL

Chesapeake & Ohio.—*Employees Stock Purchase Plan.*—Division 4 of the I.C.C. has approved an Employees Stock Purchase Plan proposed by this road. The plan provides for issuance of up to 300,000 shares of C&O common, which employees can purchase on a deferred payment basis. C&O stockholders approved the plan at a June 18 meeting. Main purpose of the plan is to enable employees to purchase stock as an incentive and to encourage employee ownership of C&O shares (*Railway Age*, May 26, page 59).

Long Island. — *Reorganization.* — The I.C.C. has decided to hold hearings on the LI reorganization plan submitted jointly by the Pennsylvania, the debtor and the American Contract & Trust Co. Date for the hearings was not set, and the commission said any party who desires to submit an alternate plan of reorganization for the LI may still do so. The commission's Division 4 does not consider the Pennsylvania-sponsored reorganization plan "prima facie impracticable," as was argued by some opponents.

Generally, this proposed reorganization plan provides for new series A first mortgage bonds, new first mortgage bonds of other series, new series A general mortgage bonds, new series A preferred stock and new common stock. Fares on the LI would be removed from the jurisdiction of the New York State Public Service Commission, and the road would be excused from at least a portion of state, local and municipal taxes (*Railway Age*, November 26, 1951, page 58).

Walter S. Franklin, president of the Pennsylvania, described the decision of the commission as "constructive." "The way is now open," he added, "to present to the I.C.C. all the facts that must be considered to insure a successful reorganization of the Long Island as a self-supporting private enterprise. The sooner such a reorganization is accomplished the sooner the people of Long Island can expect railroad service that is adjusted satisfactorily to present conditions."

Mississippi Valley Barge Line-Central Barge Line. — *Merger.* — Merger of these two barge lines into a single company has been approved by the I.C.C. Surviving corporation will be the Mississippi Valley line, which will hold authority to conduct barge and towage operations along the Mississippi and Ohio rivers and several of their tributaries. Central stockholders will receive Valley stock in exchange for present holdings, and Valley will assume all liabilities of the Central line. (*Railway Age*, April 7, page 139)

Southern Pacific.—*Stock Split.*—Division 4 of the I.C.C. has approved this road's application for authority to issue 4,527,315.0564 shares of new stock, for distribution among present stockholders on the basis of one new share for each share held. By effecting this two-for-one stock split, the road hopes to increase the number of its stockholders. (*Railway Age*, June 30, page 75). The reduction in market price which is expected to result from the split will create an opportunity for wider public ownership of the stock.

A total of 4,388,453.0564 new shares will go to public holders of SP stock. The remaining 138,862 shares will be retained by the road for conversion purposes.

The commission's approval of the stock split is conditioned upon final approval of the plan by the road's stockholders. A special meeting of the latter will be held August 5, at which holders of record as of June 30 will be entitled to vote on the plan.

New Securities

Application has been filed with the I.C.C. by:

CHICAGO, INDIANAPOLIS & LOUISVILLE.—To assume liability for $1,500,000 of equipment trust certificates to finance in part 310 freight cars costing an estimated $1,875,000.

Description and Builder	Estimated Unit Cost
250 50-ton steel box cars (Pullman-Standard Car Manufacturing Company)	$5,778
60 70-ton covered hopper cars (Pullman-Standard)	7,175

The certificates, dated August 15, would mature in 15 annual installments of $100,000 each, beginning August 15, 1953. Subject to I.C.C. approval, they have been awarded to Halsey, Stuart & Co., which submitted a bid of 99.379 with interest at 3¼ per cent.

Security Price Averages

	July 16	Prev. Week	Last Year
Average price of 20 representative railway stocks	63.65	63.58	51.00
Average price of 20 representative railway bonds	93.66	93.73	91.59

Dividends Declared

CHICAGO, ROCK ISLAND & PACIFIC.—preferred, $1.25, quarterly; common, $1, both payable September 30 to holders of record September 12.

LOUISVILLE, HENDERSON & ST. LOUIS.—5% non-cumulative preferred, $2.50, semiannual, payable August 15 to holders of record August 1.

MICHIGAN CENTRAL.—$25, semiannual, payable July 31 to holders of record July 11.

NORTHERN OF NEW HAMPSHIRE.—$1.50, quarterly, payable July 31 to holders of record July 17.

SARATOGA & SCHENECTADY.—$2.50, payable July 15 to holders of record July 1.

ORGANIZATIONS

Short Line Association Meets October 2 and 3

The 39th annual meeting of the American Short Line Railroad Association will be held at the St. Francis Hotel, San Francisco, October 2 and 3, with the following program:

1. Calling of meeting to order
2. Roll call of member roads
3. Reading of minutes of last meeting
4. Address by Francis A. O'Neill, Jr., National Mediation Board
5. Reports of election of board of directors and officers
6. Address by Robert L. Glenn, deputy director, Railroad Equipment Division, National Production Authority
7. Reports of officers—
   a. President (including board of directors)
   b. Secretary-treasurer
   c. Vice-president and general counsel
   d. Traffic managers — Eastern, Southern, Western
8. Address by William J. Patterson, Interstate Commerce Commission
9. Reports of standing committees:
   a. Accounting
   b. Car service
   c. Legislative
   d. Mechanical
   e. Operating
   f. Traffic
   g. Railway mail pay & express
   h. Freight claim rules and prevention
10. Address by Frank C. Squire, member, Railroad Retirement Board
11. Adoption by members of legislative policies
12. Address by Kenneth L. Vore, director, Military Transport Service, Department of Defense
13. Address by James K. Knudson, administrator, Defense Transport Administration
14. New business.

Frederic B. Whitman, president of the Western Pacific, will address the luncheon session on October 2.

CAR SERVICE

I.C.C. Service Order No. 888, effective from July 7 until October 31 unless otherwise modified, establishes minimum loading requirements for carload transfer freight. It stipulates that no railroad shall permit carload shipments in box cars to be stopped-off in transit to partially unload, under tariffs providing for transfer of lading to another car, unless the amount of freight destined to the stop-off point equals or exceeds 15,000 lb. for each car.

Three I.C.C. service orders which required "heavy loading" of grain and grain products, lumber and lumber products, and canned goods and foodstuffs, were vacated, effective at 11:59 p.m. July 15. The orders, respectively, were No. 874, No. 876 and No. 878; and the vacating orders were Nos. 874-A, 876-A, and 878-B.

The I.C.C. has again set back expiration dates of four service orders which it issued last month to meet conditions arising as a result of the strike in the steel industry. The new expiration date is 11:59 p.m. July 31 for three of the orders. Two of these are Nos. 884 and 885, which provide permit systems whereby railroads can get authority to load cars with ex-lake iron ore and import coal, holding such cars free of demurrage. The third is No. 886, which suspends Agent L. C. Schuldt's demurrage tariff insofar as it applies to lake cargo coal. The fourth extension was effected by issuance of No. 865-E, which suspended, from 7 a.m. July 16 until 7 a.m. August 1, the provisions of No. 865, that impose penalty demurrage charges on gondolas and flat cars.

I.C.C. Service Order No. 873 has been modified by Amendment No. 3, which set back the expiration date from July 15 to January 15, 1953. The order makes Richard H. Lambertson the commission agent with authority to control movements of tank cars.

The Car Service Division, A.A.R., has further modified Special Car Order No. 85, which was issued to expedite the return home of plain box cars (XM type) owned by western roads. The latest modification, embodied in Supplement No. 3 to the order, deletes four roads, thus leaving the order applicable to box cars owned by the Chicago, Milwaukee, St. Paul & Pacific; Chicago & North Western (including Chicago, St. Paul, Minneapolis & Omaha); Great Northern; Minneapolis & St. Louis; Northern Pacific; and Soo Line.

The Car Service Division, A.A.R., has cancelled Special Car Order No. 84, effective July 15. The order had restricted use of ventilated box cars owned by southeastern roads.

RAILWAY OFFICERS

EXECUTIVE

Felix S. Hales, vice-president—operation of the NICKEL PLATE, has been appointed executive vice-president, effective August 1. He will be succeeded by **J. C. Wallace,** general manager.

FINANCIAL, LEGAL & ACCOUNTING

George S. Cowie, assistant treasurer of the CANADIAN NATIONAL, has been appointed treasurer of the CNR system.

Edward W. Bourne has resigned as counsel for the LONG ISLAND TRANSIT AUTHORITY and has been succeeded by **William W. Golub,** who is associated with the firm of Shearman & Sterling & Wright, New York. With General Boykin C. Wright, he served as counsel for General William H. Draper, Jr., during the time that Gen. Draper was trustee of the Long Island. Mr. Golub has for many years specialized in reorganization cases, particularly of public utilities.

Alvin Babe and **Harold F. Kraft,** assistants to the comptroller of the PENNSYLVANIA at Philadelphia, have been promoted to assistant comptrollers. **Walter P. Wiegand,** chief accountant, has been promoted to assistant to comptroller. **William B. Johnson,** assistant to general counsel, has been named assistant general counsel. **Paul V. Miller,** assistant general solicitor, has been advanced to assistant general counsel.

Richard E. Keefer, whose appointment as secretary of the Finance, Accounting, Taxation and Valuation Department of the ASSOCIATION OF AMERICAN RAILROADS was announced in *Railway Age* July 14, page 88, was born in Washington, D.C., February 23, 1910. He was educated in Washington—in public schools and at Benjamin Franklin University, from which he was graduated with a B.C.S. degree. Mr. Keefer entered railroad service in 1928 as a stenographer with the former Railway Accounting Officers Association. He became secretary to the vice-president and comptroller of the Railroad Credit Coorporation in 1932; and he was employed jointly by the R.C.C. and the A.A.R. during the 1934-1936 period, his service for the A.A.R. having included the secretaryship of the association's Joint Committee of Traffic Executives and Accounting Officers. Mr. Keefer was next on a full-time basis with the A.A.R.,

R. E. Keefer

serving for about a year as assistant to the secretary of the Finance, Accounting Taxation and Valuation Department. In April 1937, he returned to R.C.C. to serve the corporation's assistant comptroller and assistant secretary until July 1943, when he became comptroller and assistant secretary. Mr. Keefer remained in those positions until R.C.C.'s liquidation in 1948—except for the period from May 1944, until January 1946, when he was in the Army. Meanwhile, Mr. Keefer had reentered the service of the A.A.R. in January 1947 as assistant to the secretary of the Finance, Accounting, Taxation and Valuation Department. He was subsequently appointed office manager for the department, a position which he held until his appointment as secretary. He will serve also as secretary of the Accounting and Treasury divisions of the A.A.R.

Claude H. Maugham, assistant auditor of passenger receipts of the CANADIAN PACIFIC at Montreal, has been appointed auditor of passenger receipts, succeeding **Charles F. Gardner,** who retired on July 1, after 47 years of service. **A. D. Gilchrist,** chief clerk for the department, succeeds Mr. Maugham. Mr. Gardner entered service with the CPR as a timekeeper at Glen yards, Montreal, transferring a year later to the office of the auditor of passenger receipts. He became auditor of passenger receipts in May 1948, after working his way up through the positions of chief clerk and assistant auditor in that department.

M. Maugham has spent his entire railway career in Montreal in the office of the auditor of passenger receipts. He joined the CPR in 1920 and became accountant in 1937. He was named chief clerk in 1946 and assistant auditor in 1948.

F. E. Chesebrough has been appointed auditor of revenue of the DELAWARE & HUDSON at Albany, N.Y., succeeding **H. A. Ostiguy,** who has retired at his own request after 36 years of service.

F. J. Whittaker, tax commissioner for the department of natural resources of the CANADIAN PACIFIC at Calgary, Alta., has retired on pension after 52 years of service with the CPR.

Carl D. Forth has been appointed general attorney for the CHICAGO & ILLINOIS MIDLAND, succeeding **Walter M. Provine,** retired.

Homer W. Davis, general attorney for the SANTA FE at Chicago, has retired after more than 43 years of service.

As reported in *Railway Age* July 7, page 162, **T. C. Richards** has been elected treasurer and **A. C. Sherwood** has been elected secretary of the UNION PACIFIC at New York. Mr. Richards was born in Brooklyn, N.Y., on February 12, 1887, and entered railroad service on July 1, 1907, as a clerk with the UP, subsequently becoming assistant treasurer.

Mr. Sherwood was born at Paterson, N.J., on August 5, 1892, and entered railroad service on December 1, 1908, with the UP at New York.

Percy S. Hinckley, freight claim agent of the BOSTON & MAINE, has retired after 46 years of service, and has been succeeded by **Charles E. Carroll,** acting freight claim agent.

J. C. Manson, freight claim agent of the CANADIAN PACIFIC at Calgary, Alta., has been transferred to Vancouver, B.C., succeeding **Durham Palmer,** who died on June 29. **D. H. Brand,** chief clerk in the freight claims department at Calgary, succeeds Mr. Manson.

OPERATING

C. S. Hulbert has been appointed trainmaster of the Toledo division of the NEW YORK CENTRAL at Elkhart, Ind.

W. P. Moffat, assistant transportation engineer of the CANADIAN NATIONAL, has been appointed transportation engineer, with headquarters at Montreal, succeeding **P. L. Mathewson,** transferred.

M. B. Phipps, general superintendent of the NICKEL PLATE at Bellevue, Ohio, has been appointed general manager at Cleveland, effective August 1, and will be succeeded by **G. R. Bowman,** assistant general superintendent at Bellevue.

George H. Emery, chief engineer of the marine department of the LEHIGH VALLEY, has been appointed acting superintendent, succeeding **Charles N. Moore,** who has retired after 45 years of service.

Grant S. Allen, assistant to superintendent of transportation of the WESTERN PACIFIC at San Francisco, has been promoted to superintendent of transportation there, to succeed **E. T. Gallagher,** who has retired.

Mr Allen worked for several other railroads before joining the WP as a brakeman in 1934. He advanced through positions of dispatcher, night

Grant S. Allen

chief dispatcher, chief dispatcher, assistant trainmaster and trainmaster, before becoming assistant to superintendent of transportation in 1951.

Mr. Gallagher began his career with the WP in 1911 as a telegrapher. He came up through the operations departments to become dispatcher, chief dispatcher to the superintendent, and ultimately, superintendent of transportation.

W. F. Mitchell, acting superintendent of terminals for the ST. LOUIS-SAN FRANCISCO at St. Louis, has been appointed superintendent of terminals at that point.

John H. Hammond, trainmaster of the Wheeling & Lake Erie district of the NICKEL PLATE, has been appointed terminal superintendent at Chicago, succeeding **H. P. Thinnes,** promoted. **A. J. Snyder,** assistant trainmaster of the Cleveland division, has been appointed trainmaster of the Peoria division. **J. W. Schaney,** assistant trainmaster of the W&LE district, has been

John H. Hammond

promoted to trainmaster of the district, with headquarters at Brewster, Ohio.

Mr. Hammond started his railway career with the W&LE, now part of the Nickel Plate, in 1922 as chief clerk to roadmaster. He later was car distributor, agent and yardmaster. In 1940 he was appointed assistant trainmaster, and three years later became trainmaster. Since 1947 he has been trainmaster for both the Cleveland and Toledo divisions.

As reported in *Railway Age* June 30, **William A. Shea** has been appointed superintendent of the Pennsylvania division of the NEW YORK CENTRAL at Jersey Shore, Pa. Mr. Shea was born at Buffalo, N.Y., in 1902, and was first employed by the NYC in the engineer-

William A. Shea

ing department in 1918, rising from chainman to assistant engineer. In 1942 he was transferred to the operating de-

SCENE: *Model 10* **AUTOMATIC SIGNAL IN ACTION**

Unseen—by the impatient motorist—is an on-rushing second train, concealed by the first. But there's no danger here of a dreaded "second train accident." Model 10's flashing lights will *continue* to operate, and the barrier arm will *remain* down until both trains have cleared the crossing.

Unseen—something that can't be illustrated: Model 10 *dependability*. Model 10's operate unfailingly, even when temperatures are extremely high or low... and regardless of snow or sleet. Moreover, Model 10's are on the job 24 hours a day—never go "off duty."

Unseen—the safety record established by Model 10's: Since 1936, thousands of these signals have been placed in operation at busy crossings, and *not a single accident has ever occurred as a result of operation failure.*

Unseen—the considerable dollar-and-cents economies effected by Model 10 protection. The low cost of Model 10 installation, operation, and maintenance is written in the records of a hundred railroads.

There's much more to tell about Model 10 safety and economy. Write for 748-RA7.

CERTIFICATE OF MERIT for Safety AWARDED WESTERN RAILROAD SUPPLY CO. BY THE NEW YORK MUSEUM OF SCIENCE AND INDUSTRY

WESTERN RAILROAD SUPPLY COMPANY

General Offices and Factory:
2428 SOUTH ASHLAND AVENUE • CHICAGO 8, ILLINOIS

partment as assistant trainmaster, becoming trainmaster at Watertown, N.Y., in 1944, and at Buffalo in 1946. On March 1, 1950, he was named assistant superintendent at Albany.

Hugh L. Smith and **P. B. Seals** have been appointed trainmasters of the GULF, MOBILE & OHIO at Birmingham, Miss., and Artesia, respectively.

Arthur F. McSweeney, whose appointment to the newly created position of assistant chief of freight transportation of the PENNSYLVANIA was noted in *Railway Age* July 7, page 164, was born in San Francisco, March 28, 1892. Mr. McSweeney's entire railroad career has been spent in the operating department of the PRR; he entered the employ of that road in 1911. After serving in various capacities, he became superintendent of freight transportation of the Western region at Chicago; in 1943 he was appointed superintendent of car service at Philadelphia; and in 1950 became acting chief of freight transportation during the absence of Brig. Gen. A. F. McIntyre. In his new position Mr. McSweeney will assist in matters involving operations in the road's freight terminals, in coordinating operations through and between terminals, and in improving service to shippers. Another objective is to

Arthur F. McSweeney

expedite exchange of business between terminals and to evolve more efficient and economical methods of transportation.

A. D. Peters, assistant general manager of the NEW YORK, CHICAGO & ST. LOUIS (NICKEL PLATE) at Cleveland, retired on July 1, after 46 years of railroad service, including 41 years with the Nickel Plate. **H. P. Thinnes,** terminal superintendent at Chicago, has been appointed assistant to general manager at Cleveland. Mr. Peters was born on November 19, 1879, at Springport, Mich., and received a degree in civil engineering from Michigan State College. He began his railroad career in 1906 as a draftsman with the Lake Shore & Michigan Southern (now part of the New York Central system) at Cleveland and later became real estate agent for that road. He joined the Lake Erie & Western (now part of the Nickel Plate system) in 1911 as land agent at Indianapolis. Since 1916 he has served in supervisory capacities. First he was superintendent at Lima, Ohio, transferring to Chicago in 1924 and to Fort Wayne in 1932. From 1936 to 1944 he was general superintendent at Cleveland and in May 1944 he was promoted to assistant general manager.

As reported in *Railway Age* June 30, page 82, **Stephen T. Keiley** has been appointed superintendent of the St. Lawrence, Ottawa and Adirondack divisions of the NEW YORK CENTRAL at Watertown, N.Y. He succeeds **Harry G. Farnham,** who is on inactive status

Stephen T. Keiley

because of ill health. Mr. Keiley was born in Yonkers, N.Y., on December 29, 1906, and attended New York University night school (B.S. in Finance and Transportation 1947). He was first employed by the NYC in 1924 as chairman in the engineering department at New York and, after a series of promotions, was transferred to the operating department in 1940 as a special agent. In 1941 he was appointed trainmaster at Norwood, N.Y., transferring to New York three years later. Mr. Keiley was promoted to assistant to general manager at Syracuse in 1948, transportation assistant to the vice-president at New York in January 1949, and assistant to the manager of Grand Central Terminal in New York later in 1949.

Robert W. Hopkins, transportation assistant to the vice-president of the UNION PACIFIC, has been appointed terminal superintendent at Denver, succeeding **C. E. Breternitz,** who has been appointed vice-president (operations) of the KANSAS CITY TERMINAL.

R. C. Bryant, general manager of the Frisco Transportation Company, a subsidiary of the ST. LOUIS-SAN FRANCISCO, has been appointed supervisor of motor transportation for the Frisco, and will continue as general manager of the F.T.C. His headquarters are at Springfield, Mo. He succeeds **W. L. English,** who retires as vice-president of the F.T.C. and supervisor of motor transportation for the Frisco.

Len Mayrisch, manager of freight protection, merchandise and station service of the SOUTHERN PACIFIC, at San Francisco, has been promoted to assistant to general manager at that point. He is succeeded by **Philip M. Chaimov,** office manager in the office of vice-president in charge of operations, and general manager.

TRAFFIC

W. O. Poteat has been appointed general agent of the CLINCHFIELD at Johnson City, Tenn. The position of commercial agent there, formerly held by Mr. Poteat, has been abolished.

Herbert P. Horne has been appointed general agent of the WABASH at Boston, succeeding **C. B. Hoxie,** who has retired after more than 46 years of railroad service.

E. Ralph Chapin has been appointed district freight and passenger agent of the SOUTHERN at Dallas, Tex., succeeding **George F. Kay,** deceased.

Kenneth C. Miller, general industrial and agricultural agent of the SPOKANE, PORTLAND & SEATTLE at Portland, Ore., has retired after 23 years of service.

As *Railway Age* reported on June 30, **J. T. Hellmann,** general western passenger agent for the SOUTHERN at Chicago, has been appointed general passenger agent, succeeding **W. C. Spencer,** who retired.

Mr. Hellman entered the service of the Southern as a ticket seller in 1913, and, subsequently to 1927, served as assistant city ticket agent, city passenger agent and traveling passenger agent. He then held several other positions in the passenger traffic department before being promoted to general western passenger agent in 1938.

Mr. Spencer entered the employ of the Southern in 1901 as a clerk, and continued service in the passenger traffic department until 1918. At that time he was appointed passenger traffic representative and was promoted to district passenger agent in 1920. He became division passenger agent in 1929, subsequently serving as district passenger agent and assistant general passenger agent, being appointed general passenger agent in 1944.

Otto Kopp, western freight traffic manager of the NORTHERN PACIFIC at Seattle, has been appointed general freight traffic manager in charge of sales and service, a newly created position, at St. Paul. **R. D. Bone,** general agent in the freight department at Seattle, succeeds Mr. Kopp there, as western freight traffic manager in

Pittsburgh's Hot-Spray CARHIDE

The Two-in-one Freight Car Paint!

Provides twice as much paint in one application . . . Increases paint shop capacity . . . Keeps equipment on the haul for more pay hours

YOU'LL get more pay hours from your freight rolling stock when you paint them with Pittsburgh's Hot-Spray CARHIDE. This latest development in famous CARHIDE railway finishes provides the equivalent of *two coats of paint applied cold with a single application* . . . puts cars into service more quickly . . . keeps them looking better longer.

● **In Hot-Spray CARHIDE,** heat is used in place of conventional thinners to adjust viscosity to weather and temperature conditions. No matter when you paint, this new type of coating goes on more uniformly, has better adhesion, dries quickly to a higher gloss, and gives you tougher, longer-lasting protection.

● **Hot-Spray CARHIDE** can be applied with approximately half the usual air pressure. This reduces the amount of "fog" in the paint shop—more of the solid material reaches the surface being painted. There is less paint sag—more paint is applied with less labor. As there is much less thinner to evaporate from the paint, imperfections from shrinkage are greatly decreased.

● **Refinishing is speeded** as half the time needed to apply two coats, as well as drying time between coats, is eliminated. Shop capacity is practically doubled without increasing space, manpower or equipment.

● **We'll be glad** to give you further details about this new labor-saving freight car paint. A wire, phone call or letter from you may save time and money in your shop, traffic and operating departments.

PITTSBURGH PLATE GLASS CO., Industrial Paint Div., Pittsburgh, Pa. Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Atlanta, Ga.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Ditzler Color Div., Detroit, Michigan. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio. M. B. Suydam Div., Pittsburgh, Pa.

PITTSBURGH PAINTS

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

charge of service and sales. **E. M. Stevenson,** foreign freight agent at Seattle, succeeds Mr. Bone. Mr. Stevenson's successor is **C. H. Pickrell,** traveling freight and passenger agent at Seattle.

Mr. Kopp entered the service of the railroad in 1923 at Duluth, Minn. He was subsequently traveling freight agent in Minnesota and North Dakota, and assistant general freight agent at St. Paul, before returning to Duluth in

Otto Kopp

1939 as assistant general freight agent. In 1942 Mr. Kopp went to Seattle, as general freight agent, and in 1947 was promoted to western freight traffic manager there.

Mr. Bone, who has been with the NP since 1922, was city freight agent and soliciting freight agent at Seattle, and district freight and passenger agent at Aberdeen, Wash., prior to his appointment as general agent, freight department, in 1947.

As reported in *Railway Age* June 30, **A. W. Morgan** has been appointed assistant freight traffic manager of the NEW YORK CENTRAL at Chicago, succeeding **Leroy Blue,** retired. **J. R. Tascik,** assistant to the freight traffic manager, has been appointed to succeed Mr. Morgan as general freight agent at Chicago. Mr. Morgan entered NYC service as a messenger in 1907. In 1928 he was appointed general agent and served at Houston, Tex., and Milwaukee, Wis. In 1937 he was named general freight agent for the Indiana Harbor Belt at Chicago, and in 1948 became general coal freight agent for the NYC, also at Chicago.

He was appointed general freight agent in 1949.

Mr. Blue started as a clerk in 1905, and subsequently held positions as general agent and division freight agent, becoming assistant general freight agent at Toledo in 1927, and transferring to Chicago in 1928. He was later general freight agent for the IHB and the Pittsburgh & Lake Erie, and in 1941 was appointed to the same position with the NYC. He became assistant freight traffic manager in 1948.

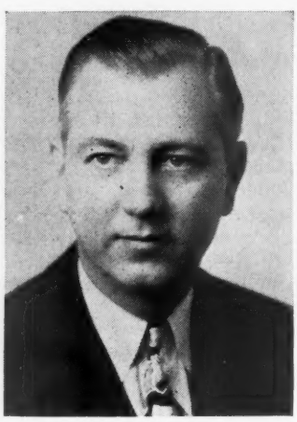
Mr. Tascik started as a yard clerk in 1917. Since 1920 he has been associated with freight rate, I.C.C. and state regulatory work for the NYC. He has been assistant to the freight traffic manager for the past year.

Charles S. Gregory, Jr., division freight agent for the GULF, MOBILE & OHIO at Birmingham, Ala., has been appointed division freight traffic manager at the same point, succeeding the late **C. H. Dege. J. E. Mowery,** commercial agent, succeeds Mr. Gregory at Birmingham.

J. P. Donovan, traffic representative for the TEXAS & PACIFIC at Chicago, has been appointed foreign freight agent at New Orleans.

Thomas G. Lynch, assistant to president of the PIEDMONT & NORTHERN and the DURHAM & SOUTHERN, has been appointed director of industrial development and public relations. His new duties in the field of industrial development are in addition to those which he previously performed in public relations and advertising, and he will also continue as editor of the railroads' employee publication, "Semaphore."

C. H. Pistor, assistant freight traffic manager of the TEXAS & PACIFIC at Dallas, Tex., has been promoted to freight traffic manager, with the same headquarters, succeeding **E. L. Billingsley,** who has retired after some 45 years of service with the railroad. **F. J. Loughlin,** general freight agent at New Orleans, has been appointed freight traffic manager at that point. **B. V. Reynolds,** assistant general freight agent at Dallas, has been advanced to general freight agent, with



C. H. Pistor

the same headquarters, and **C. E. Willis,** chief clerk to freight traffic manager, has been promoted to assistant general freight agent to succeed Mr. Reynolds.

Mr. Pistor received the degree of LL.B. from Benton College of Law in 1925, after beginning his railroad career with the Mobile & Ohio (now Gulf, Mobile & Ohio) in 1917 as secretary to general freight agent. In 1928 he went with the T&P as clerk in the traffic department, and advanced through various positions until 1947, when he was appointed general freight agent. Mr. Pistor was promoted to assistant freight traffic manager in 1948.

Mr. Billingsley began his railroad career in 1902 as a clerk in the accounting department of T&P at Dallas. After serving from 1915 to 1920 with the Railroad Commission of Texas at Austin, he reentered the service of the T&P, advancing through various positions until 1945, when he was made general freight agent. Mr. Billingsley was appointed assistant freight traffic

E. L. Billingsley

manager in 1947 and a year later was promoted to freight traffic manager.

Mr. Loughlin began his service with the T&P in 1912. He was appointed assistant general freight agent at New Orleans in 1933, and was advanced to general freight agent in 1947.

Mr. Reynolds joined the T&P in 1930 as assistant division clerk at Dallas.

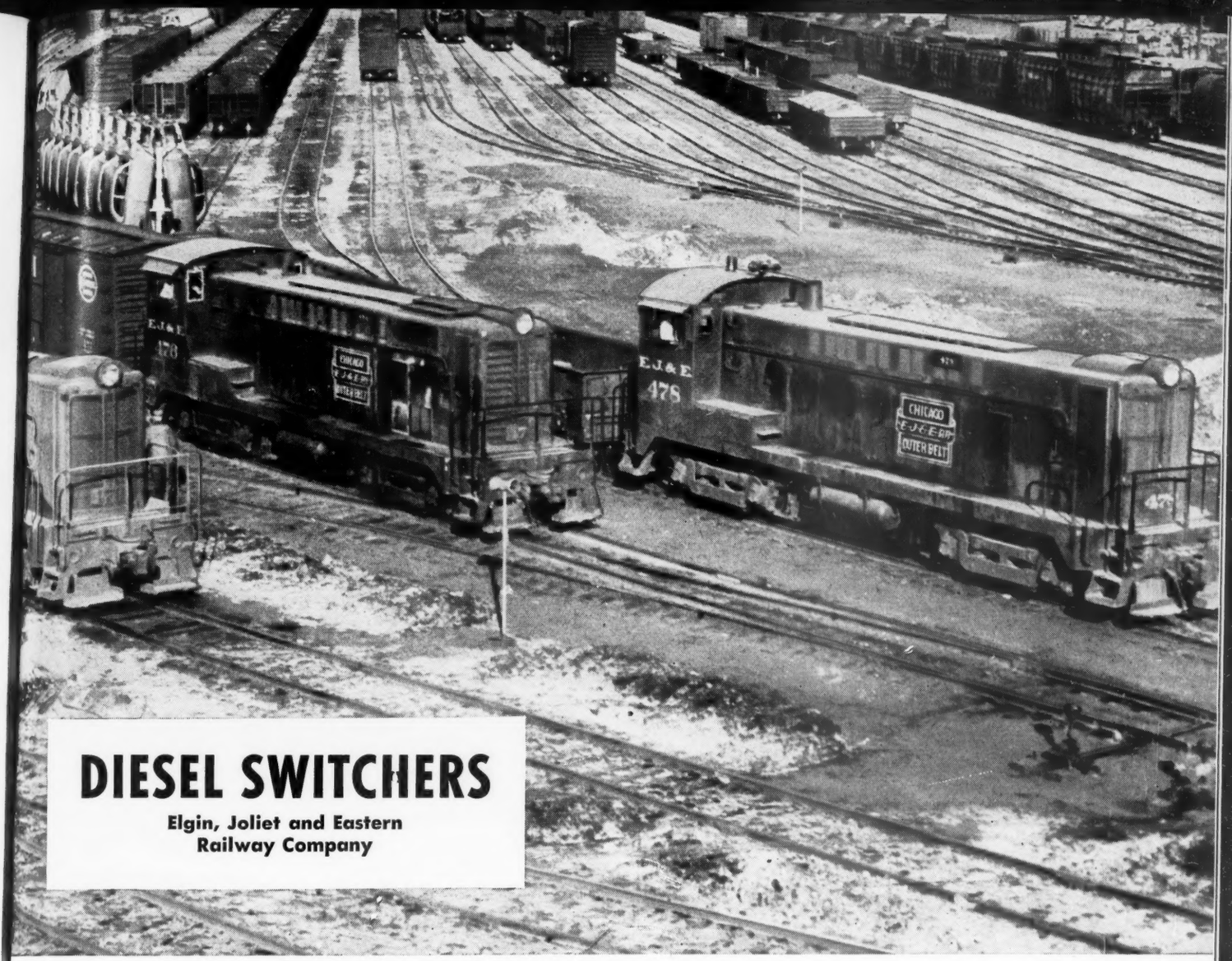
He later served as chief division clerk, and in 1944 was promoted to assistant general freight agent.

William V. Hardie, traffic consultant for the ST. LOUIS-SAN FRANCISCO, with headquarters at Springfield, Mo., retired on July 1.

Ray J. Blunck, traveling agent of the MINNEAPOLIS & ST. LOUIS at St. Louis, has been promoted to general agent at Dallas, Tex., succeeding **Merwin R. Peake,** deceased.

F. E. Kriebel, foreign freight agent of the SOUTHERN PACIFIC at New York, has been appointed assistant to freight traffic manager there, succeeding **G. E. Miller,** promoted. **L. F. Andreas** succeeds Mr. Kriebel.

Roy Blackburn, general agent of the MISSOURI-KANSAS-TEXAS at El Paso, Tex., has been appointed division freight and passenger agent at Deni-



DIESEL SWITCHERS

Elgin, Joliet and Eastern Railway Company

92 diesel switchers on the Elgin, Joliet and Eastern Railway use . . .

STANDARD HD
TRADE MARK
Oil

GIRDLING Chicago's vast Metropolitan area, the Elgin, Joliet and Eastern Railway connects with all lines entering this great Railway Capital of America. On Chicago's South Side, it serves one of the largest and most concentrated industrial sections in the world.

Contributing to the efficiency of the E. J. & E. Ry. in this big and busy operation is the low-cost, reliable service delivered by diesel switchers. In *92* units, STANDARD HD Oil is delivering clean, effective lubrication. Used for *10* years on the E. J. & E. operation, STANDARD HD has given ample evidence of its ability to help keep maintenance costs low, availability high.

STANDARD HD Oil is now used by over 70 railroads. Make this acceptance your basis for investigating the benefits offered by this superior heavy-duty lubricant. A Standard Oil Railway Department representative through his extensive experience stands ready to help you obtain more effective lubrication. For his services, write: Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

STANDARD OIL COMPANY STANDARD *(Indiana)*

At
Hotel Cleveland
you'll enjoy
friendly, attentive service...
delicious food...
quiet, sleep-inviting rooms...
a sincere and hearty welcome.
★
You'll be only a step
(through covered passage)
to Union Terminal trains
and garage, and convenient
to anywhere you'll want
to go in Cleveland.

Hotel Cleveland
CLEVELAND, OHIO
Other Affiliated Sonnabend Hotels
NEW YORK
Ritz Tower
BOSTON
The Somerset
The Puritan
The Shelton
CHICAGO
Edgewater Beach Hotel
RESORTS
Whitehall, Palm Beach, Fla.
Samoset, Rockland, Me.

son, Tex., succeeding **T. H. Scales,** deceased. **W. D. Dennis** succeeds Mr. Blackburn as general agent at El Paso.

G. A. Hobbs, European passenger manager of the CANADIAN PACIFIC at London, England, has retired on pension, and has been succeeded by **E. S. Spackman,** general passenger agent at London. **P. K. Reynolds,** assistant general passenger agent there, succeeds Mr. Spackman.

A. Carleton Hancock, general agent of the ST. LOUIS-SAN FRANCISCO at Greenville, S.C., has been transferred to Charlotte, N.C., succeeding the late **E. B. Clotfelter. James M. Crites,** general agent at Fort Worth, Tex., succeeds Mr. Hancock at Greenville.

MECHANICAL

The position of acting superintendent motive power of the SOUTHERN at Charlotte, N. C., was abolished, effective June 17.

Clay M. Lewis, Jr., chief chemist for the MISSOURI-KANSAS-TEXAS at Parsons, Kan., has been named engineer of tests at the same point. **Earl V Seifert,** car and locomotive draftsman, has been appointed to the newly created position of assistant engineer of tests.

R. C. Johnston, assistant master mechanic on the PENNSYLVANIA at Pitcairn, Pa., has been promoted to master mechanic at Chicago, succeeding **T. J. Sheridan.**

PURCHASES & STORES

J. K. McCann, district storekeeper for the BURLINGTON at Havelock, Neb., has been appointed assistant general storekeeper at Chicago, succeeding **R. A. Schuff,** who has been named general storekeeper. **W. F. Myers,** chief lumber inspector, succeeds Mr. McCann. **W. R. Rieke,** district storekeeper at West Burlington, Iowa, has been appointed to suceed Mr. Meyers. **R. E. Begitske,** general storekeeper for the FORT WORTH & DENVER at Childress, Tex., succeeds Mr. Rieke. **D. O. Nash** succeeds Mr. Begitske. **J. J. Jirousek,** acting district storekeeper at Havelock, returns to his former position of district storekeeper at Lincoln, Neb. **W. E. Bird,** acting district storekeeper at Lincoln, returns to his former position of assistant district storekeeper at Havelock.

Mr. McCann was born at Carrollton, Mo., and entered the service of the Burlington in 1919 as a machinist helper at Havelock. He subsequently advanced through a number of minor positions until November 1940, when he was made inspector of stores at Chicago. A month later he was promoted to district storekeeper at Denver, subsequently being transferred to Havelock.

E. Bartos, general traveling storekeeper for the SANTA FE at Topeka, Kan., has been appointed division storekeeper at Chicago, succeeding **H. H. Higgie,** who has retired. **A. V. Sorenson,** division storekeeper at Clovis, N. M., succeeds Mr. Bartos. **J. F. Dooley,** division storekeeper at Winslow, Ariz., has been transferred to succeed Mr. Sorenson. **F. R. Ames,** division storekeeper at Slaton, Tex., has been transferred to Winslow, and **W. F. Lawler,** order clerk at Albuquerque, N. M., replaces Mr. Ames at Slaton.

ENGINEERING AND SIGNALING

Lyle Bristow, assistant division engineer of the CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS (NEW YORK CENTRAL) at Springfield, Ohio, has been appointed division engineer of the Illinois division at Mattoon, Ill., succeeding **E. A. Humphreys,** who has retired after 39 years of service.

Robert Craig Steele, who was appointed assistant engineer of signals of the CANADIAN PACIFIC, at Montreal, on May 1 of this year, has been advanced to system engineer of signals, succeeding the late **Eldred S. Taylor.** Mr. Steele is a native of Stevensville, Ont., and was for some time with the New York Central. He was assistant

Robert C. Steele

signal engineer of the Grand Central Terminal and the Electric, Harlem and Putnam divisions of that road at the time of his appointment as assistant engineer of signals of the CPR.

F. B. Manning, division engineer of the Pere Marquette district of the CHESAPEAKE & OHIO, at Detroit, has been promoted to acting engineer bridges and structures, with the same headquarters, succeeding **O. E. Hager,** who becomes assistant engineer at Detroit, at his own request because of

his health. **R. T. Guest** has been appointed acting division engineer to succeed Mr. Manning. **D. Patterson** has been appointed assistant engineer bridges at Detroit, succeeding **L. A. Olson,** assigned to other duties.

R. O. Stewart, assistant chief engineer, construction, of the CANADIAN NATIONAL, has been appointed chief engineer of operation (system), with headquarters as before at Montreal, succeeding **Barton Wheelwright,** whose retirement was reported in *Railway Age* July 7, page 166. Mr. Stewart was born at Lindsay, Ont., on May 19, 1889, and attended the University of Toronto (B.Sc. in C.E. 1911). He began his career with the Dominion

R. O. Stewart

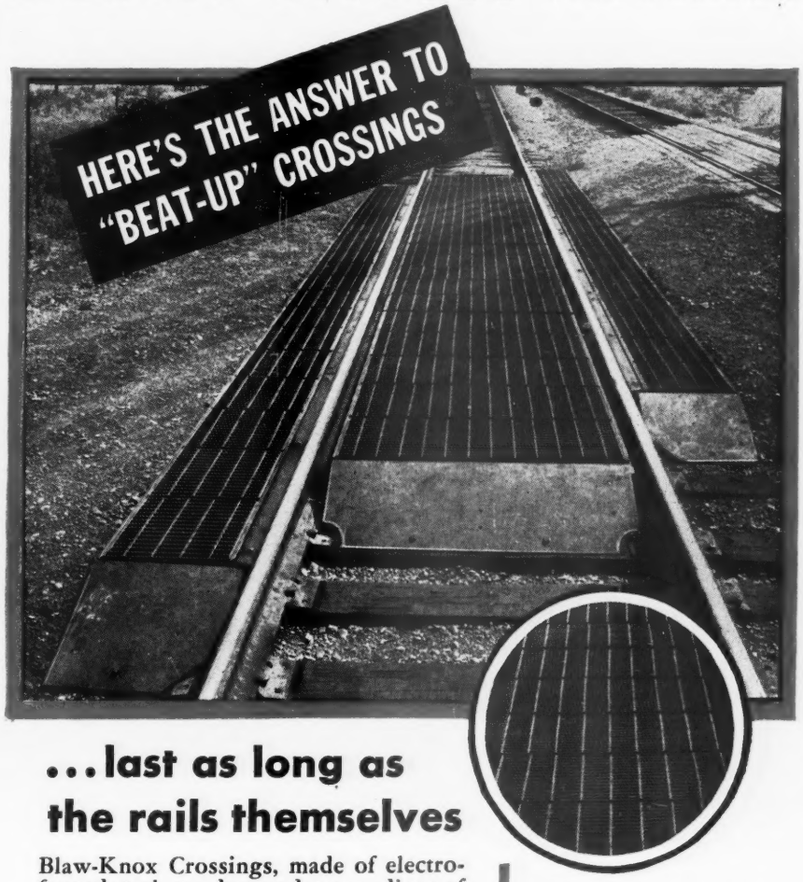
Bridge Company, entering railroad service in 1913 as assistant bridge engineer with the Canadian Government Railways (now CNR) at Moncton, N. B. In 1921 he was appointed assistant engineer of bridge standards at Toronto and two years later transferred to Montreal. Mr. Stewart was named engineer of bridge standards in 1931, assistant structural engineer in 1932, assistant engineer of bridges later in 1932, engineer of bridges in May 1942 and assistant chief engineer, construction, at Montreal in May 1951.

SPECIAL

As reported in *Railway Age* May 26, page 65, **William V. McCarthy** has been appointed assistant general manager—personnel of the NEW YORK CENTRAL at Syracuse, N. Y. Mr. McCarthy was born at Syracuse on May 12, 1892, and entered the service of the NYC as a clerk in the superintendent's office at Syracuse in 1909. He became chief clerk at nearby DeWitt yard in 1915 and was appointed trainmaster on the Adirondack division in 1930, transferring to the Mohawk division in 1936. In 1942 he was named assistant supervisor of schedules at Syracuse and in December 1947 became assistant to the general manager at Syracuse.

(Continued on page 66)

BLAW-KNOX STEEL CROSSINGS



...last as long as the rails themselves

Blaw-Knox Crossings, made of electroforged steel, stand up under poundings of heavy traffic... provide the answer to high cost crossing maintenance. They encourage public goodwill because they are permanently smooth, always safe. Note twisted cross bars for better tire traction.

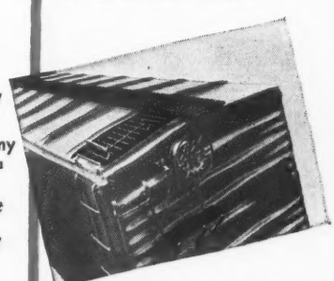
The open mesh construction of Blaw-Knox Crossings promotes perfect drainage and ventilation... preserves life of ties... cuts track maintenance at crossings. Sections can be easily lifted by two men for tamping tracks, renewing ties and cleaning ballast. Installation can be made on any curve or tangent.

For information on railroad applications for Blaw-Knox Self-Cleaning Grating, write for Bulletin 2395.

The Foremost Crossing for

- LONG LIFE
- LOW MAINTENANCE
- VEHICLE SAFETY
- ELIMINATION OF PUMPING

BLAW-KNOX RUNNING BOARDS AND STEPS—feature twisted cross bars electroforged to serrated bearing bars...assure safe footing under all conditions. Running Boards available for roofed cars and tank cars.



DISTRIBUTORS FOR BLAW-KNOX GRATING FOR RAILROAD CROSSINGS:

East of the Mississippi—Russell Steel Products Company
332 South Michigan Avenue, Chicago 4, Illinois

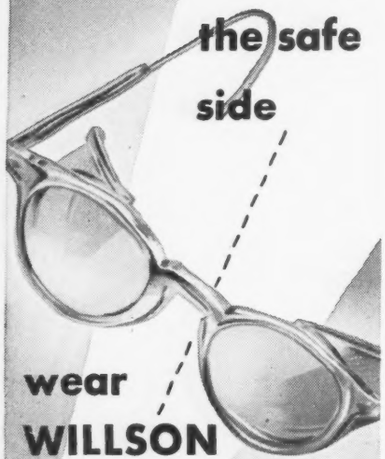
West of the Mississippi—Brodhead Steel Products Company
17th & Wisconsin Streets, San Francisco 10, California

Railway Equipment and Grating Department
BLAW-KNOX DIVISION of Blaw-Knox Company
2044 Farmers Bank Bldg., Pittsburgh 22, Pa.

BLAW-KNOX *Electroforged*® STEEL CROSSINGS, RUNNING BOARDS, STEPS

WILLSON
dependable
eye protection

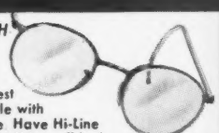
keep on
the safe
side



wear
WILLSON
SPECTACLES

Combined protection, comfort and appearance make Willson safety spectacles outstanding in value. Choose from a full range of metal and plastic frames—fitted with Super-Tough* heat-treated glass lenses, or Plas-Tough* plastic lenses—every one tested for impact resistance and optical quality. Send for catalog describing our complete line of safety equipment.

STYLE AH



METAL FRAME Latest style spectacle with single bridge Have Hi-Line temples with a "dressy" look. Also available with sideshields. (Non-flammable plastic frame Style WKS shown at top.)

CHOOSE YOUR FAVORITE LENSES FOR ANY WILLSON SPECTACLES

Super-Tough* Plas-Tough* Willsonite*

Three popular types of lenses are available for all Willson Spectacles. Clear glass Super-Tough*, Willsonite* Green Super-Tough* and the new Plas-Tough* lenses that combine the impact resistance of heat-treated glass with the comfort of lightweight plastic.

*Trademark

See your Willson distributor or write for bulletin

WILLSON PRODUCTS, INC.
241 Washington St., Reading, Pennsylvania

OBITUARY

Walter R. Dyer, president and general counsel of the FORT DODGE, DES MOINES & SOUTHERN, died July 14 in Boone, Iowa.

Eugene A. Clifford, who retired in 1947 as general passenger agent of the CHICAGO & NORTH WESTERN, died at Phelps, Wis., on July 8.

CONSTRUCTION

SP Awards First Contract For Los Angeles By-Pass

The first large contract for construction of the by-pass freight line which is to extend from Puente, Cal., on the SP main line, to the Santa Ana branch, has been awarded to the Fitzgerald Engineering & Construction Co., of Los Angeles. It covers grading and construction of roadbed between Whittier Junction and Firestone boulevard, at a cost of more than $200,000.

When the new line is completed, it will permit by-passing of the Los Angeles district for through freight originating or terminating in the industrial districts adjacent to Santa Ana. It will require construction of 8.6 miles of new track and joint use of 6.6 miles of Union Pacific main line between Puente and Whittier Junction, to form a 15.2-mile route costing approximately $4,300,000.

Atchison, Topeka & Santa Fe.—The general building contract for the Argentine, Kan., diesel shop has been awarded to the Swenson Construction Company of Kansas City, Mo. Electrical work on this project will be undertaken under a joint contract with the Super Electric Construction Company, Chicago, and the Squire Electric Company, Kansas City.

Atlantic Coast Line.—The following contracts have been awarded, at indicated estimated costs: To the Ellard Contracting Company and associates, Birmingham, Ala., for a grade change at Fitzgerald, Ga., and Waycross ($730,000); to the Atlantic Construction Company, Rocky Mount, N.C., for enlarging a yard at South Rocky Mount ($300,000); to the Ewell Engineering & Contracting Co., Lakeland, Fla., for a diesel shop building at Lakeland ($200,900); and to C. C. Jones., Jessup, Ga., for grading for second track at Leake, Ga., and Hortense ($168,000).

Additional projects have been authorized, at indicated probable costs: Diesel shop facilities ($160,470), and 2.7 miles of second track ($146,342), in Bellwood yard, Atlanta, Ga.; set-off track at Dunbarton (Sonora), S.C. ($80,229); realinement of main track near Palatka, Fla. ($77,086); central heating system in the general office buildings at Wilmington, N.C. ($51,231); and two set-off tracks at Pecan, Fla. ($39,556).

Baltimore & Ohio.—Contracts, at an estimated total cost of $145,000, have been awarded to: C. F. Englehart, Inc., for work on bridge No. 91 at Heglers, Ohio; George Vang, Inc., for work on Bridges Nos. 94 and 96 at Berea, Ohio; the Lacchi Construction Company, for diesel washing facilities at Riverside (Baltimore), Md.; and Sheet Metal Febricators, Inc., for dust collecting equipment in a grain elevator at Locust Point, Balitmore.

Bessemer & Lake Erie.—A contract has been awarded to the New Castle (Pa.) Duntile Company for constructing an overhead highway bridge at Queen Junction, Pa., at an estimated cost of $100,000.

Central of New Jersey.—The New Jersey Board of Public Utility Commissioners has ordered this road to eliminate grade crossings at Washington and Prospect avenues and at Grove and Pulaski streets in Dunellen, N.J., and at Rock avenue in Plainfield, N.J. Work is to be completed by June 1, 1955.

Illinois Terminal.—This road has applied to the I.C.C. for authority to construct a 2.25-mile segment to con-

CROSSINGS
FROGS — SWITCHES

Your Railroad Track Material requirements tailor-made exactly to specifications. NELSON IRON WORKS, backed by years of know-how in this highly specialized business, is a recognized leader in the field.

NELSON
IRON WORKS, INC.
45 SPOKANE ST. SEATTLE, WASH.

nect its own main line with facilities of the Bi-State Development Agency at Granite City, Ill. The development agency is constructing dock and track facilities to serve barges operating on the Mississippi river. Cost of constructing the new IT line would be paid from current funds, the road said.

Long Island.—Installation of automatic short arm gates with flashing signals, at Robbins lane, Syosset, N.Y., has been authorized at a probable cost of $32,153.

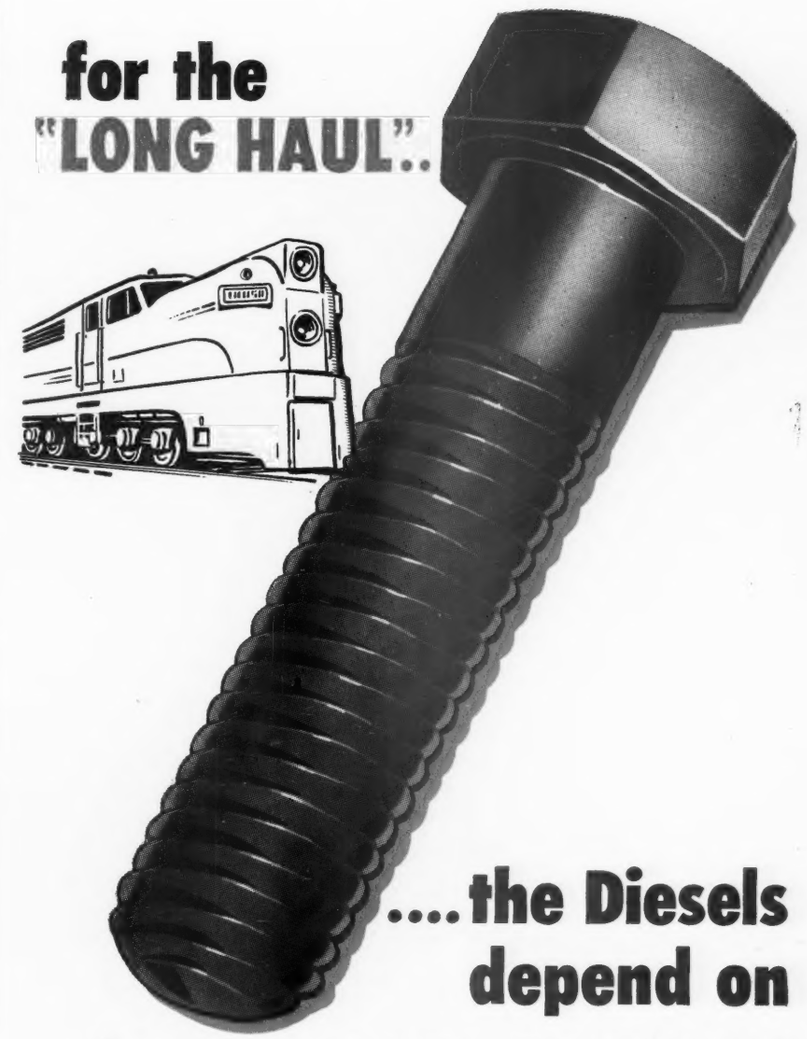
New York Central. — Contracts have been awarded as follows: To the Metzger Construction Corporation, Buffalo, N.Y., for reconstruction of a viaduct at Hamburg and Seneca streets in Buffalo; to the Walsh Construction Company, New York City, for icing and servicing facilities at Interchange terminal, Weehawken, N.J.; and to the Fred Ballard Construction Company, Syracuse, N.Y., for diesel servicing and inspection facilities in DeWitt yard, Minoa, N.Y.

Reading.—The following contracts have been awarded, at indicated estimated costs: To the J. E. Brenneman Company, the Hauser Construction Company, and the H. B. Frazer Company, all of Philadelphia, for reconstructing Piers A and C at Port Richmond, Philadelphia ($500.000); to the Brenneman company for repairs to other waterfront facilities in Philadelphia ($120,000); to L. H. Focht & Son, Reading, Pa., for reconstructing a bridge on the Grace mine spur at Joanna, Pa. ($60,000); to the J. C. Shawfield Company, Harrisburg, Pa., for grading and drainage in a new yard at Cleona, Pa. ($50,000); and to the Lam Building Corporation, Philadelphia, for alterations and additions to a freighthouse on Erie avenue in Philadelphia ($20,000).

Rutland.—The O. W. Miller Company, Ludlow, Mass., has been awarded a contract for a bridge foundation at Rutland, Vt. Estimated cost of the project is $49,116.

Texas & New Orleans.—This road has applied to the I.C.C. for authority to construct and operate a 5.45-mile line in Milam county, Tex. The line would provide a connection with the Rockdale, Sandow & Southern, and would enable the T&NO, through direct interchange, to serve the plant which the Aluminum Company of America is constructing at Sandow, Tex. The T&NO would finance construction of the new line from working capital.

Meanwhile, the commission has modified a previous order in which Alcoa was authorized to acquire control of the RS&S. Alcoa was required to give the International-Great Northern a 10-year option to purchase the RS&S (*Railway Age*, April 14, page 65). The I.C.C. has added new conditions to assure protection of T&NO interests.



Lamson CAP SCREWS

Rugged, dependable, long-lasting Lamson Cap Screws have contributed a great deal to the tremendous "switch-over" to Diesel locomotion in the past few years.

Every Diesel requires hundreds of Cap Screws, each of which bears a share of the tremendous stresses and strains involved in holding the parts of the locomotive together. Under such circumstances Cap Screws show their true rugged qualities.

If you want Cap Screws that have passed this ultimate of tests, specify Lamson and be *sure.*

Lamson & Sessions

Railroad Sales Department
The LAMSON & SESSIONS Co.
1917 West 85th St., Cleveland 2, Ohio
Plants at
Cleveland and Kent, Ohio • Birmingham • Chicago

Check the products below that interest you; tear off bottom of ad and send to us for complete information.

Large Bolts • Cotters • Square and Hex. Nuts • Weather-tite Bolts • Bent Bolts • Phillips and Clutch Head Screws • Lock Nuts • Cap Screws

Can you match Inland Steel's performance in materials handling?

If yours, too, is *big production* business, why not profit by the experience of Inland Steel? Here, big jobs involve big money; and the systems that stay are those that deliver *highest production.*

This year Inland expects to produce about 4,500,000 tons of ingots. To handle the heaviest lifting jobs connected with that output—to handle scrap, ore, limestone and coal within the 650 acre works at Indiana Harbor—Inland depends upon American Locomotive Cranes.

Why? Because American Locomotive Cranes can move loads that lighter equipment couldn't budge. Because they can swing, lift and travel all at once. Because their upkeep cost is unbelievably low. Because they are *completely modern* one-man machines, as different from early steam cranes as the jet plane is different from the Jenny.

Before you buy any lifting, loading or switching equipment, get comparative figures on American Locomotive Cranes. For big production, they are *always* your best buy!

Modernize...economize...with

American Hoist
& Derrick Company
ST. PAUL 1, MINNESOTA

For the BIG PRODUCTION jobs of industry...

AMERICAN LOCOMOTIVE CRANES